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Textile World

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CONTENTS

Management

Lousy Economics—and Lousy Politics (*Editorial*) . . . 63
U. K. Hearing Brings Solid Textile Opposition 64
Wool Labeling Before F. T. C. 66
Outerwear Convention Favors Modernizing 1930 Rules . . 77
TEXTILE WORLD'S Guide to Knitting Arts Exhibition. . 79
Knitters' Associations Plan Decisive Action on Vital Problems 83
The Editor Says 99

Merchandising

"Violent Upturn" in Cotton Possible, Says W. Ray Bell . . 67
In Search of New Markets Knitters Try New Uses 86

Mill Engineering

Integral-Furnace Boiler Installed by Sanford Mills . . . 72
New Machinery and Processes 116

Men

Labor Productivity Increased by Mechanical Changes . . 68
An Absent-Minded Superintendent 107

Methods

Cleanliness in Throwing Doubly Important in Case of Rayon 70
Topmaker and Spinner Must Cooperate for Good Yarn . . 71
Finishing Symposium Feature of D-13 Meeting 74
Higher Roll Speeds in Drawing Produce Stronger Yarn . . 76
Staple Cotton Fabrics 78
Production Planning System for Full-Fashioned Hosiery . 88
Notes on Fixing Circular Hosiery Machines 92
Needle Counter Aids Yarn Consumption Calculation . . 93
Redyeing Silk Hosiery Requires Extreme Care 94
Georgia Men Discuss Carding and Spinning 111
Printing Rollers Must Be Handled Carefully 112
Cotton Yarn Preparation—Is This the Best Method? . . 113
Loomfixers' Manual, Cotton—Chap. III 114
Loomfixers' Manual, Wool—Chap. III 115

Knitting Arts Exhibition Number

Special Features and Guide to Show Begin on Page 79

DEPARTMENTS

News of the Month 102
Textile World Analyst 106
The Overseers' Corner 107
Questions and Answers 109
Letters to the Editor 100
Free for the Asking 123
New Machinery and Processes 116
New Dyes and Chemicals 119
New Publications; Suppliers' News . . 120
The Personal Page 125
Textile Mill News 129
Overseers' Practical Helps 108

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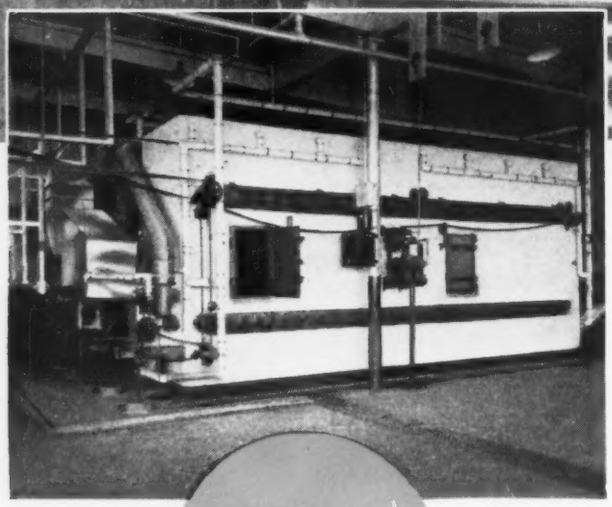

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Textile World

APRIL, 1938

DOUGLAS G. WOOLF, *Editor*

Lousy Economics—and Lousy Politics

DURING the first part of our attendance at the hearings last month on the United Kingdom trade agreement, we were amazed that two groups of intelligent men—the members of the committee, on the one hand, and the members of industry, on the other—could reach, apparently in all sincerity, such diametrically opposite conclusions on a relatively simple issue. As we thought it over, however, we realized that this was due to two entirely different methods of approach.

On the one hand there is a broadly philosophical viewpoint which leads to the conclusion that an increase in the flow of world trade is essential to the maintenance of world peace and that the main step toward that increase is reduction of trade barriers.

Now, it is not hard to understand why Secretary Hull, Dr. Henry F. Grady, A. Manuel Fox, or any of the others on the Government side, are such ardent believers in this idea. They can *afford* to.

But how about a man who runs a woolen mill or a cotton mill or some other kind of textile plant? During the last five years, he has seen his labor and other costs pyramided, throwing him still further out of line with world prices. He has watched the invasion of the domestic market by products of low-wage countries. Most recently, he has felt his entire business structure giving way under him, to the point where he is now operating at a small fraction of capacity, losing money on every order he takes, and observing a deplorable situation among his employees, which he is powerless to remedy.

Is he supposed to welcome a proposal to yield some more of his fast-disappearing market, merely for a broadly philosophical objective? He can't *afford* to.

•

It seems to us that this fact might have penetrated the minds of those committee members who kept complaining: "But you industrialists say that *no* rates can be changed. Why don't you cooperate with us on individual items?" The answer is too simple, we suppose, to occur to academicians. It is true that practically no tariff rates, on textiles at least, *can* be lowered without resulting in hardships to the workers in the domestic industries involved. One textile witness drove this fact home again and again in this simple manner: There is no sense in decreasing tariffs unless it has the effect of increasing imports—and increased imports mean just that much displacement of domestic goods, and consequently a proportionate increase in domestic unemployment. . . . Possibly he should have said it in Greek. . . .

But, argues the other side, tariff reductions will increase our export trade, and build up those industries dependent upon export. Well, it so happens that the benefit would go largely to agricultural and allied enterprises—and industry has pretty much come to the conclusion that still more Government aid to agriculture, at the expense of industry, is going to further upset an already cock-eyed economic relationship.

Two other simple truths stand out—which the members of the committee seem quite unable to grasp: 1. The threat from this agreement is not so much the increase in U.-K. trade but the increase in Japanese trade—and no third-nation clause will prove to be flexible enough to prevent the damage before it becomes too serious. Previous experience with "flexible" provisions proves that fact. 2. The small percentage which imports of many products bear to domestic production should not be ridiculed, as the committee members seem to enjoy doing. Too often, the effect of low-cost imports upon the domestic price structure converts a minor factor into a major one.

•

The textile industry did one of the best jobs in its history, in its presentations before the committee. By all standards, it established its case. Opinions differ as to whether the committee will recognize that fact—and at the very least postpone action for the time being, pending some clarification of the business outlook. If it doesn't, it will be making the latest, and most inexcusable, of a series of Administration blunders. It would be lousy politics, as well as lousy economics.

U.-K. Hearings

Bring out solid front of opposition from the textile industry

UNANIMITY of opinion—a rare bird in the textile industry—was reflected in the appearances of textile leaders at hearings on the proposed reciprocal trade agreement with the United Kingdom held before the U. S. Tariff Commission's Reciprocity Information Committee.

The story told by trade association officials and manufacturers was a most convincing one to spectators, but apparently had little effect upon the members of the committee. The main theme in the story was: The American textile industry is sunk in depression; why do anything to further threaten it and its workers?

Despite the logic of this and other arguments advanced, many observers came away from the hearings with the feeling that they had presented a good show for nothing—and that the final agreement will be pretty much the same as it would have been had the hearings never been held.

Appear for Cotton-Textile Institute

Appearing for the Cotton-Textile Institute, Dr. Claudius T. Murchison, president, and a number of representatives of member firms presented a well integrated group of statements. Dr. Murchison, in giving the general picture, emphasized these points: (1) The cotton-textile industry is already in a state of deep distress and consequently a proposal to reduce tariff protection causes consternation among employers and employees. (2) For 15 years the industry has been on an over-capacity basis. (3) The American cotton-textile wage scale exceeds that of the British industry by as much as 145%. (4) Present tariff rates not only fail to be excessive but, on the contrary, are inadequate. (5) Through the most-favored nation principle, the proposed agreement would give an unintended and unreciprocated advantage to other countries which have lately come into industrial prominence.

Witnesses who presented statements on the various branches of the cotton textile industry included: Charles A. Sweet, of Wellington Sears Co., who urged that no concession be made on terry-woven towels valued at 45¢ or more each; Richard Pohlers, of Rosemary Mfg. Co., who pointed out that further reduction in duties on table damask and napkins would merely substitute British products made of linen for the present American products made of cotton; W. F. Regnery, of Joanna Cotton Mills, who pointed to the 50% increase in shade cloth imports in 1937 over 1936, and warned against the effect of tariff reduction on these cloths; H. M. Brigheim, of Wellington Sears Co., who presented in evidence letters from the Navy Department concluding that the expansion of the existing sources of supply for airplane fabrics, and not the development of new sources, was the real hope; and John B. Clark, vice-president of the Cotton Thread Institute, who declared that any tariff concession at this time would aggravate an already serious unemployment situation.

In connection with the Cotton-Textile Institute's testimony, A. Manuel Fox, who presided, stated that the Tariff Commission had never found any organization more cooperative than that Institute. However he emphasized the fact that all the testimony showed that "no cotton textile rate could be touched" and urged that the experience of the industry be put at the disposal of the Commission in a careful study of each particular item.

Southern Combed Spinners Heard

Another organization which was represented by a group of witnesses whose statements fitted in to give a clear picture of its field as a whole was the Southern Combed Yarn Spinners Association. The first speaker for this group was R. D. Hall, president, who approached the subject from the human standpoint. The tariff on fine yarns is primarily a protection for American workers against low-wage employees of other countries, he stated. However, not only are the actual workers in the industry involved, but the human problem extends to the many thousands whose existence is dependent upon the production, ginning and warehousing of the cotton consumed annually by the combed yarn spinners. Another group whose interests are involved, Mr. Hall pointed out, are the stockholders in the mills, made up in the main of small merchants, doctors, farmers, widows and orphans—and a great many mill operatives themselves.

The second speaker for the combed yarn association was Emery B. Denny, president of Ranlo Mfg. Co., Gastonia, N. C., who analyzed the depressed condition among combed yarn spinners; pointed out that lower tariff on fine yarns would bring, not only from the British Empire but under the most favored nation principle from many other foreign countries, a flood of competition which would close American plants and throw American workers out of employment. He made a striking argument in pointing out that the result would be a great volume of goods coming into this country produced by workers working at long hours and low wages—and yet, as he put it, "if an American manufacturer would dare to undertake to produce similar goods under similar conditions, and at the same scale of wages, he would be universally condemned by our Government and our people."

Albert G. Myers, president of Textiles, Inc., another speaker on behalf of the Southern Combed Yarn Spinners Association, recommended that, rather than there being a reduction in the present tariff scale, there be an increase in the finer counts and the products into which they are used in order to equalize costs of the American producer with the foreign producer. "It is not felt by the combed yarn producers," said Mr. Myers, "that the business lost to rayon and other synthetic fibers will ever be retrieved, and a further loss of volume of combed yarn to domestic producers by the lowering of tariffs will be nothing short of disaster to the combed yarn industry as a whole."

Dean Hill, appearing for the Mercerizers Association of America, urged that all thought of reduction in mercerized cotton yarns be abandoned. He referred to the sharp loss of volume in mercerized yarns in recent years and also pointed out that in the last three years the industry has lost 85% of its export business. "Our industry has given to Great Britain until it hurts," he said.

Frank E. Slack, representing the Association of Cotton Yarn Distribu-

Dr. C. T. Murchison

Arthur Besse

W. Ray Bell

Russell T. Fisher

R. Dave Hall

John B. Clark

A. G. Myers

Lewis A. Hird

Fred W. Steele

Dean Hill

Frank E. Slack

H. K. Webb

SPOKESMEN FOR TEXTILE INDUSTRY AT U. K. HEARINGS

tors, said that, without adequate protection, we may expect an increase in the volume of imported cotton yarn and cotton products, which would result in further curtailment in the spinning mills, and elimination of organizations and personnel in the distributive channels.

Speak for New England

"If tariffs are to be reduced, labor will have the choice of taking further reductions in wages to meet foreign low wages or the loss of opportunity for employment—neither solution a very happy one for those vitally concerned," warned Russell T. Fisher, president of the National Association of Cotton Manufacturers. England would not be the only country to benefit, he emphasized. Automatically Japan, Switzerland, Belgium, Czechoslovakia, The Netherlands, Italy, France, and all other cotton manufacturing countries except Germany would receive equal treatment.

Increased distress would result in the domestic industry if the tariff rates were reduced, asserted Fred W. Steele, who represented the New Bedford Manufacturers Association at the hearing.

Speaks for Textile Merchants

Reduction of tariff schedules on cotton fabrics would work greater harm to the industry of this country than it would benefit the industry of the United Kingdom, stated W. Ray Bell, president of the Association of Cotton Textile Merchants of New York. "Present tariffs afford a minimum of protection to offset lower wage scales and standards of living," he added; "the rates are in no way oppressive on the American consumer and further sharing of American markets should be distributed among other industries than textiles."

Tariff rates on cotton goods were adopted prior to the unforeseen strides of the Japanese industry in world markets, he pointed out. They were primarily intended to equalize our cost of production with that of the United Kingdom and were based on average wage levels of less than 32¢ per hour obtaining in 1930. The current rate is about 42½¢ per hour, for the cotton goods industry. "If the true purpose of tariff schedules is to equalize the cost of production at home and abroad," he argued, "then it would seem advisable to raise the rates rather than lower them to compensate for the efforts being made in this country to extend employment and raise the rates of pay."

Lawrence Richmond, of the Crompton Co., but appearing also on behalf of a number of other manufacturers of velveteen and corduroy, stated that a reduction in the present duty on velveteen would threaten to force the domestic industry out of the twill-back business. However, he expressed the industry's desire to cooperate with the committee and said that, on the other hand, so far as corduroy is concerned, a moderate reduction in the present duty of 50% on the 52-inch material valued at 50¢ or more per sq. yd. would not be harmful. The new rate should not be less than 40%, he stated.

Wool Manufacturers Appear

An extremely comprehensive and careful study of the whole situation had been made by the wool manufacturers and was presented at the hearing by a line-up headed by Arthur Besse, president of the National Association of Wool Manufacturers. Mr. Besse emphasized particularly the following four points:

(1) The wool industry is such a vital one to this country in times of both war and peace that it is unwise to make it dependent in any way upon another country. (2) The industry needs the protection it now has, and more, if it is going to maintain its present schedule of wages and hours. (3) The profit record of the industry is so deplorable and the condition of the industry is so depressed that a tariff cut is unthinkable. (4) The concessions given to the United Kingdom would be extended to all other countries with the possible exception of Germany—and these would include the low-wage newly industrialized countries such as Italy, Czechoslovakia and Japan.

A point made throughout the presentation was that it does not make sense to consider possible changes in the complicated and intricate wool schedule without first determining definitely whether there is to be any alteration in the rate on raw wool upon which the entire schedule is based. This referred of course to the

(*Continued on page 138*)

Wool Rules in FTC Hands

Fiber labeling schedule soon to be issued subject to another public hearing

By BLAINE STUBBLEFIELD
TEXTILE WORLD'S *Washington Office*

FIBER identification rules for the wool industry seem inevitable. Beyond the immediate contending interests which appeared before the Federal Trade Commission, March 29, Washington observers see several main forces acting toward that end.

The New Deal is engaged in a general campaign of protection for consumers. FTC is determined to complete its program of identification for several classes of fabrics: silk, rayon, wool, and perhaps others. In this policy it is encouraged by reports here that the rayon industry has benefited by rules some of its members opposed. Finally, public opinion appears to be 100% for fiber identification. If rules were not set up by FTC, regulation, probably of a more stringent character, would be enacted by Congress.

Congressional action is already proposed in the Schwartz-Martin bill, designed "to protect producers, manufacturers, and consumers from the unrevealed presence of substitutes . . . ." Senator H. H. Schwartz is from Wyoming and of course represents the wool growers' interests. It is said that the Senator and strong backers placed the bill as a threat to insure effective action by FTC. Others say its real purpose is to put case-hardened teeth in the Federal Trade Commission Act. Backers of the bill simply say that they want to "implement" the Commission's jurisdiction, which is held in doubt by some authorities. As this is written, chances that the bill can be brought to the floors of Congress amid the spring rush seem fairly slight. However, Senate Committee hearings have been held with witnesses repeating their FTC hearing testimony.

The Bureau of Standards has recently set up minimum fabric labeling requirements for wool goods based on tests, with a long list of acceptors agreeing to voluntary compliance, which includes manufacturers, clothiers, retailers. Although the date for full retail observance has not yet arrived, observers allege that the plan is ineffective, because it has no enabling law behind it. Looking into the future, however, they see possible important functions for the Bureau. As has been stressed at the hearings, the best reclaimed wool is far better than the poorest virgin wool. Therefore, they say, the revelation of percentages will not always protect the consumer. A conclusive test of durability and heat insulation is the real thing, and the development of a suitable standard test might well be put up to the Bureau.

Various Sides of Wool Picture

Just what is behind the wool manufacturers' fight against imposition of rules by FTC? The writer asked that question of people on both sides, and of several neutral on-lookers. The manufacturers said that identification would cost a lot of money. It would confuse and harass the industry at this most inopportune time. Labeling and otherwise revealing percentages of new and used wool, they said, would do neither retailers nor consumers any good. Laymen do not understand the relative merits of new and reclaimed wool. Customers will shy away from garments marked, for example "40% virgin wool, etc,"—the same garments that have served well in the past. This negative effect will drive more wool prospects over to rayon, they contended. Furthermore, even the manufacturer cannot determine percentage of mixture, because of various wastes along the line.

Those favoring the rules saw in the opposition a fundamental of human behavior in competitive enterprise. It costs more to make goods of new wool, they said. Some manufacturers, aided and abetted by dealers and retailers, put the cheaper reclaimed wool in their goods, knowing that most of it will eventually be sold as "all wool" to consumers. These manufacturers depend upon this margin of cost-saving for their market.

It was disinterested on-lookers who stated that percentage of new and re-worked wool is not the answer, and who looked ahead to a more accurate measure of quality. They admitted, however, that the unrevealed use of inferior fibers constitutes an opportunity for chiseling. They cited the Forstmann policy and proposed rules as evidence. The wool industry will be better off, and so will the public, in their opinion, when strict identification is achieved. A wool-conscious public will demand more wool goods, increase the volume, lower prices. The question of how a relatively static supply of virgin wool will go around under these conditions was not clearly explained.

Most retailers really do not want the rules, trade men said. It was always the clerk behind the counter, at the behest of the store keeper, who told shoppers "It's all wool," when it wasn't. But many alert merchants are seizing the opportunity to echo the words of FTC to their public. Some stores take the attitude that identification won't help the consumers; so why bother telling them about it? Others, notably R. H. Macy & Co., believe consumers *want* to know, and contend that's reason enough for telling them.

Final rules may not be effective till far into summer. By unanimous vote, the March 29 meeting asked the trade practice section of FTC to formulate tentative rules for public hearing. All data and opinion presented at the two conferences, and during the interim, will be considered. The rules proposed by Forstmann and those by N. A. W. M. will be used as framework. The latter obtained support from various groups at the hearing. When the job is completed, the Commission will give 15 days' notice of public hearings. Further revision will then be made and final rules formulated. Probably a considerable period, possibly six months, will be allowed after effective date of the rules for clearance of inventories.

—And the Silk Rules

Tentative silk rules, on which the trade practices section is also working, apparently are not nearing completion. Members have spent most of their time preparing for the wool meeting. Fifteen days' notice will be given in advance of the public hearings on the silk rules. It is understood the Commission will try to coordinate the conflicting views presented by trade leaders at the March conference with the purpose of shaping a code that is likely to win industry acceptance.

"Violent Upturn"

In cotton textiles a possibility, says W. Ray Bell in annual survey

THE CHANCES of a violent upturn in the cotton textile situation in the second or third quarter of this year are emphasized by W. Ray Bell, president of the Association of Cotton Textile Merchants of New York, in his annual survey of "Ten Years of Cotton Textiles." The conditions which suggest such a change include a production rate approximating that of 1932 when economic conditions were at their depths; continued popularity of cotton products at retail; and consequent drain upon stock reserves in the channels of distribution, without adequate replenishment. "Should normal commitments of the trade be unduly deferred," states Mr. Bell, "the chances of a violent upturn in the second or third quarter will be greatly increased, since current quotations average between 28 and 35% under those of a year ago."

The survey shows that activity of the cotton textile industry in 1937 was 4.16% greater than that of 1936, despite more than a 12% decline in spindle hour operations during the last half of the year compared with the last half of 1936. The proportionate yardage production for the full year was slightly less than 9,000,000,000 sq. yd. of woven cloth, establishing a new production record.

As will be noted from the attached table, spindles in place at the beginning of 1938 were about 1,000,000 under those in place a year previous. The new total of 26,704,476 spindles includes as additions and replacements the largest amount of new spinning equipment produced in this country for a great many years. The total modernized equipment since 1927 now amounts to approximately 4,000,000 spindles which tallies with the losses by dismantling during the last three years. This is the first year in which replacements have borne anything like an adequate relationship to equipment losses.

The high rate of activity over a large part of 1937 accounted for the largest year's consumption of raw cotton in history: 7,425,000 bales against 7,094,000 bales in 1936.

"From the contrasting distributive experiences of these two years, it is clear that the rise and fall of trade inventories play a major role in determining the extent of primary market demand which, in turn, must guide productive operations," concludes Mr. Bell. "It is doubtful that the varying volume of these stocks in distributive channels have an appreciable influence on public consumption from year to year, especially as the sensitive price structure of the industry quickly adjusts itself to economic change, to preserve balance with the public purse. Trade activity, on the contrary, is usually expressed in extreme movements of alternate accumulation and liquidation of inventory. Whether a change in the current emphasis on liquidity will come early or later in the year now depends chiefly on general economic influences outside the industry. Should there be any favorable developments, the market would probably prove quickly responsive."

TEN YEARS OF COTTON TEXTILES—Data assembled by The Association of Cotton Textile Merchants of New York from Bureau of the Census reports and information obtained through the courtesy of machinery manufacturers. Cloth production for the non-census or even years and for 1937 has been estimated to correspond to spindle hour activity during the preceding census years

	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
EQUIPMENT											
Spindles in place at beginning of year	36,465,976	35,267,086	34,541,486	33,608,494	32,326,526	31,442,174	30,938,340	30,889,484	29,253,444	27,700,194	26,704,476
Increase or decrease from preceding year	898,754	1,198,890	725,600	932,992	1,281,968	884,352	503,834	48,856	1,636,040	1,553,250	995,718
New installation, additions and replacements	255,912	320,784	251,936	205,068	143,908	348,568	529,840	214,874	469,316	772,724	
OPERATION											
Spindles active at any time during year ending July 31st	33,569,792	32,417,036	31,245,078	28,979,646	27,271,938	26,894,860	27,742,462	26,700,946	24,664,428	25,419,180	
Spindles idle during same period	2,896,184	2,850,050	3,296,408	4,628,848	5,054,588	4,547,314	3,195,878	4,188,538	4,589,016	2,281,084	
Average number of active spindles based on twelve monthly reports	29,961,648	30,408,548	27,269,470	25,674,107	23,250,757	24,873,270	25,119,435	23,421,150	23,373,147	24,079,936	
Intermittent spindles (being the difference between average active spindles and those active at some time during year)	3,608,144	2,008,488	3,975,608	3,305,539	4,021,181	2,021,590	2,623,027	3,279,796	1,291,281	1,339,174	
Percentage relation of average active spindles to spindles in place	82.16%	86.22%	78.95%	76.39%	71.92%	79.11%	81.19%	75.82%	79.9%	86.93%	
Spindle hours run	92,728,880,678	99,899,724,476	76,702,655,168	77,793,298,853	70,218,347,911	86,580,232,828	75,711,412,882	76,017,361,934	91,773,252,676	95,591,131,816	
Hours run per average active spindle	3,095	3,285	2,813	3,030	3,020	3,481	3,014	3,246	3,926	3,970	
MARKET											
Production in square yards	7,846,440,000	8,398,616,000	6,448,392,000	6,955,391,000	6,278,222,000	7,866,040,000	6,875,579,000	7,150,246,000	8,632,192,000	8,991,302,000	
Exports in square yards	546,847,000	564,444,000	416,285,000	366,959,000	375,446,000	302,042,000	226,306,000	186,565,000	200,501,000	236,251,000	
Imports in square yards	61,295,000	61,185,000	35,517,000	34,732,000	29,436,000	41,348,000	41,533,000	63,674,000	114,195,000	147,320,000	
Available for domestic consumption	7,360,888,000	7,895,357,000	6,067,624,000	6,623,164,000	5,932,212,000	7,605,346,000	6,693,806,000	7,027,355,000	8,545,886,000	8,902,371,000	
Population at July 1st	119,798,000	121,526,000	123,091,000	124,113,000	124,974,000	125,770,000	126,626,000	127,521,000	128,429,000	129,257,000	
Available for per capita consumption in square yards	61.44	64.97	49.29	53.36	47.47	60.47	52.86	55.11	66.54	68.87	

Labor Productivity

Increased by mechanical changes in cotton and woolen and worsted industries

Long a matter of interest, the effect of improved textile machinery and equipment on labor productivity has not been accurately determined until recently. Such a study was undertaken by the U.S. Bureau of Labor Statistics in cooperation with the National Research project of the W.P.A., and the results of mechanical changes in the woolen and worsted and the cotton industry were summarized by Boris Stern in the August, 1937, and January, 1938, issues of the Monthly Labor Review. The data presented in these reports were prepared in collaboration with Barnes Textile Associates. The following abstract of these two reports shows the increase in man-hour output of several types of cotton, woolen, and worsted fabrics made possible by mechanical changes which occurred between 1910 and 1936. It indicates also the amount of improvement which has taken place in the various manufacturing departments.

By BORIS STERN
U.S. Bureau of Labor Statistics

THERE is hardly a department in a cotton or woolen and worsted mill which has not been affected by the great improvement made in textile machinery during the last quarter of a century. Semi-automatic machines have been made automatic. Automatic processes have been simplified and extended. Where the same types of machines are still in use, they have been redesigned and equipped with attachments which have greatly improved their efficiency.

This article attempts to measure the changes in output per man-hour which were made possible between 1910 and 1936 by improvements in machinery and equipment used in the manufacture of cotton, woolen, and worsted fabrics. The changes in output that developments of machinery alone make possible between two dates can never be studied directly from mill records. It might well be that no mill could have been found in either 1910 or 1936 producing a given type of cloth and having the latest equipment in every department. Even if two mills were found that met the basic requirement of the study, differences in the recorded output per man-hour could not be attributed to machine development alone. Changes in the size of the plant and its location, the type and condition of machinery used, the nature and variety of the product manufactured, management, the type of labor available, the working conditions within the plant, and other factors may have a decided influence on the mills' output per man per hour.

Therefore composite mill records have been built up from actual records of performance in separate departments in many mills, and two hypothetical groups of mills have been assumed—one operating under conditions of 1910, and the other operating under conditions of 1936. The assumptions which have been made regarding these mills are:

1. Each mill was engaged in the manufacture of one and the same type of cloth in 1910 and 1936 and produced an approximately equal quantity of finished goods in both periods.
2. Each mill was equipped with the best machinery available at that time. This machinery is assumed to have operated at the machine speeds prevailing in the respective periods.
3. The machinery in both periods was adequately housed in buildings designed to meet the requirements of each mill, and the mills were provided with such lighting and heating facilities as would be considered good engineering in the respective periods.
4. The type of labor available remained constant and working hours unchanged throughout both periods. Both groups of mills are assumed to have operated on two 40-hr. shifts a week. For each mill and for each period all so-called processing departments and all office and managerial functions have been excluded.
5. There was good management in both periods.

The various kinds of cotton cloth studied are: carded broadcloth, combed broadcloth, sheeting, carded-filling sateen, canton flannel, print cloth, lawn, and terry toweling. The woolen fabrics are a 32-oz. overcoating and a 12-oz. flannel. The worsted fabrics are a serge and a cotton-warp worsted-filled suiting.

The results of the investigation are summarized in Tables I, II, and III. In the case of cotton fabrics, the greatest increase in man-hour output was for terry cloth, this increase amounting to 151.8%. Production of lawn showed the next greatest increase, amounting to 90.2%. The possible labor-time reduction in the terry-cloth mill was 59.9% and in that producing lawn 46.5%. The exceptionally large increases possible in the output per man-hour in the mills producing terry cloth and lawns with the most modern equipment in 1910 and 1936 were due to the development and adoption, during this period, of automatic looms—which were already in use in 1910 for the six other cotton

Table 1—Productivity and labor requirements in manufacture of cotton, woolen, and worsted fabrics in 1910 and 1936

Mill producing —	Man-hour output of finished product (gray cloth)					Labor-time requirements for identical quantity of output			
	1910		1936		Percent of increase	Output (yards of gray cloth)	Man-hours required for two 40-hr. shifts		
	Pounds	Yards	Pounds	Yards			1910	1936	Percent of decrease
Cotton fabrics:									
Carded broadcloth	3.26	16.30	4.88	24.40	49.69	437,890	26,880	17,960	33.18
Combed broadcloth	2.65	10.60	4.26	17.04	60.75	295,828	27,880	17,360	37.73
Sheeting	3.95	15.80	6.14	24.56	55.44	541,496	34,200	22,040	35.56
Carded-filling sateen	2.76	13.14	4.05	19.28	46.74	343,742	26,120	17,840	31.70
Canton flannel	7.25	13.55	11.47	21.44	58.21	559,149	41,280	26,080	36.82
Print cloth	3.05	12.20	[1]4.62	[1]18.48	51.50	307,000	25,200	[1]16,600	34.10
Lawns	0.92	8.28	[1]1.75	[1]15.75	90.20	220,000	26,680	[1]14,000	47.50
Terry cloth	2.84	10.79	[1]7.15	[1]27.17	151.80	[2]701,680 [1]712,480	75,400	[1]30,240	59.90
Woolen products:									
32-oz. overcoating [3]	4.99	2.16	9.21	3.98	84.60	21,816	10,120	5,480	45.80
12-oz. wool flannel [3]	3.08	3.67	5.79	6.88	87.50	37,440	10,200	5,440	46.70
Worsteds:									
Worsted serge [3]	1.32	1.56	2.47	2.90	86.30	74,400	47,840	25,680	46.30
Cotton-warp worsted-filled suitings [3]	2.13	4.06	3.99	7.62	87.50	129,500	21,840	11,680	46.50

[1] Data for 1935; [2] 1910; [3] covers only departments included in this study.

Table II—Percent of increase in man-hour output of cotton fabrics by processing departments in 1936 compared with 1910

Department	Percent of increase in man-hour output, in mill producing —							
	Carded broadcloth	Combed broadcloth	Sheeting	Sateen	Flannel	Print	Lawn	Terry cloth
Carding	85.12	101.86	112.49	81.39	95.92	93.05	100.00	112.30
Spinning	32.21	31.58	38.89	32.75	32.54	37.35	43.06	45.56
Spooling and warping	150.00	176.93	169.18	120.00	142.31	159.74	122.22	171.74
Slashing and drawing	50.00	37.49	60.00	42.86	57.13	66.67	16.69	65.56
Weaving	48.43	60.00	37.78	47.30	50.56	41.24	184.90	290.62
Cloth room	11.77	15.38	22.22	14.29	22.22	15.34	20.05	2.99

Table III—Changes in man-hour output of woolens and worsteds by processing departments, 1910 to 1936 [1]

Department	*Woolen cloth* 32-ounce overcoating		*Woolen cloth* 12-ounce flannel		Department	*Worsted cloth* Worsted serge		*Worsted cloth* Cotton-warp worsted-filled suiting	
	Relative significance of department in 1910 [2]	Per cent of increase in man-hour output, 1910-36	Relative significance of department in 1910 [2]	Per cent of increase in man-hour output, 1910-36		Relative significance of department in 1910 [2]	Per cent of increase in man-hour output, 1910-36	Relative significance of department in 1910 [2]	Per cent of increase in man-hour output, 1910-36
Rag picking	6.3	54.10	[3]	.....	Sorting, scouring, and picking	6.5	93.70	5.1	93.80
Burr picking	[3]	.....	0.8	[4]	Carding	2.5	47.90	2.6	35.80
Blending and picking	5.5	237.30	6.3	208.30	Top making (combing and gilling)	6.2	25.70	4.8	26.10
Carding	15.0	83.20	13.3	81.90	Drawing	10.0	15.90	8.1	6.70
Spinning	16.6	21.60	27.5	49.80	Spinning	13.0	18.20	8.1	18.50
Spooling and dressing	10.3	85.70	11.8	114.40	Twisting	13.4	166.70	[3]	.....
Weaving	46.2	112.70	40.4	101.90	Spooling and warping	2.8	70.00	[3]	.....
					Slashing	0.8	25.00	[3]	.....
					Filling preparation	5.2	153.20	10.6	158.40
					Weaving	39.5	159.30	60.8	121.30

[1] Measured for each department in terms of the product made in the department.
[2] Ratio of the labor time of each department to the total labor time of all the departments.
[3] Not required. [4] No change.

Table IV—Labor required for producing same amount of cotton fabrics in 1910 and 1936

Department	*Number of workers required*															
	Carded Broadcloth		Combed Broadcloth		Sheeting		Carded Filling Sateen		Canton Flannel		Print cloth		Lawn		Terry cloth	
	1910	1936	1910	1936	1910	1936	1910	1936	1910	1936	1910	1936	1910	1936	1910	1936
Carding	174	94	218	108	238	112	156	86	290	148	166	86	148	74	242	114
Spinning	156	118	150	114	200	144	154	116	220	166	154	112	146	102	230	158
Spooling and warping	60	24	72	26	70	26	44	20	126	52	52	20	40	18	136	50
Slashing and Drawing-in	24	16	22	16	32	20	24	14	44	28	20	12	14	12	96	58
Weaving	190	128	176	110	238	174	218	148	274	182	178	126	268	94	1,078	276
Cloth room	38	34	30	26	44	36	32	28	44	36	30	20	24	20	68	66
Power, yard, maintenance, etc.	30	35	29	34	33	39	29	34	34	40	30	33	27	30	35	34

fabrics which have been studied.

For the woolen-mill departments covered in this study, the increase in possible man-hour output between 1910 and 1936 was 86.4% in the manufacture of the 32-oz. overcoating, and 87.5% in manufacture of the 12-oz. woolen flannel. Among the worsted products, the increase in the man-hour output between 1910 and 1936 was 86.3% for worsted serge, and 87.5% for cotton-warp worsted-filled suiting. As a result of this increased labor productivity, the man-hour requirements to produce an equal yardage of woven woolen and worsted cloth in 1936 showed a marked decline, averaging about 46.5% for the two woolen and two worsted products covered by the study.

Obviously, under the assumptions made, the greatest increase in the man-hour productivity in each mill occurred in the department which underwent the largest amount of mechanical improvement between 1910 and 1936. In the case of cotton fabrics, the largest productivity increase was made possible in the spooling and warping department. The increase in the man-hour output of that department ranged from 120% for carded-filling sateen to 176.9% for combed broadcloth. Although the percentage increase in the labor productivity of the spooling and warping department was greater than for any other department, it must be emphasized that this department employs a smaller amount of labor than most of the other departments and, consequently, has a smaller effect on total labor requirements.

Again, although the effect of the use of modern equipment on employment in the spinning room in 1936, as against the use of modern equipment in 1910, appears to be less than in other departments, the mechanical changes in this department had a very large influence on the requirements in the sections of the mill where the stock is processed for spinning.

In woolen mills the largest increase in the output per man per hour made possible by machine developments between 1910 and 1936 occurred in blending and picking. The increase was 208% in manufacturing 12-oz. flannel, and 237% in manufacturing 32-oz. overcoating. However, this department consumes only about 5.5% of the total labor time, as compared with 16.6% for spinning and 46.2% for weaving.

It is apparent, therefore, that in studying the effects of mechanical changes on the labor requirements of a given plant, emphasis must be placed not only on the changes in the man-hour output of a particular department or operation, but also on the relative importance of the department in the plant as a whole. Table IV shows the number of workers required in each department for producing the same amount of cotton fabrics in 1910 and 1936. Table V shows the man-hours required in each department for producing the same amounts of woolen fabrics in 1910 and 1936; and Table VI gives similar information for worsteds.

Table V—Changes in labor requirements for producing same amount of woolen cloth in 1936 as in 1910

Department	*Man-Hours Required* 32-oz. Overcoating		12-oz. Flannel	
	1910	1936	1910	1936
Rag Picking	640	400	.....	.....
Burr Picking	.....	.....	80	80
Blending and Picking	560	160	640	200
Carding	1,520	800	1,360	720
Spinning	1,680	1,360	2,800	1,840
Spooling and Dressing	1,040	560	1,200	560
Weaving	4,680	2,200	4,120	2,040

Table VI—Changes in labor requirements for producing same amount of worsted fabric in 1936 as in 1910

Department	*Man-Hours Required* Worsted Serge		Cotton-Warp Suiting	
	1910	1936	1910	1936
Sorting, Scouring, Picking	3,120	1,520	1,120	560
Carding	1,200	800	560	400
Top Making	2,960	2,320	1,040	800
Drawing	4,800	4,080	1,760	1,600
Spinning	6,240	5,200	1,760	1,440
Twisting	6,400	2,400	.....	.....
Spooling and Warping	1,360	800	.....	.....
Slashing	400	320	.....	.....
Filling Preparation	2,480	960	2,320	880
Weaving	18,880	7,280	13,280	6,000

Cleanliness in Throwing

Doubly important in case of rayon; uniform humidity and tension essential

By HENRY MIEDENDORP, JR.
Consulting Textile Engineer

ONE of the first and most important things to be learned by the throwster in changing over from silk to rayon is the fact that rayon must be kept clean. Rayons receive just enough of a boil-off (often only a light washing) to remove the size and oil applied to the yarn in warp sizing or in soaking. Consequently any soiling of the yarn in handling or processing is likely to remain on the finished merchandise. Extreme care should always be taken, therefore, to keep rayon yarn free from dirt, grease, oil and other foreign matter.

Start at the Soaking

Cleanliness should start at the soaking operation, with the use of modern equipment. Regardless of whether the standing bath, circulating bath, or pressure system is used, the equipment should be built of materials which are easily kept clean. The room in which it is set up should be devoted exclusively to soaking and located adjacent to the dry room or drying machine.

If dirt or other foreign matter is allowed to become attached to rayon during the soaking operation, it is likely to become imbedded in the folds of the yarn during the operations which follow. Soaking bags, if they are used, should be washed out at frequent intervals, and covered and protected from dirt and dust when not in use. If unfiltered water or live steam is used for mixing or heating of soaking solutions or soaking baths, strainers made for the purpose or improvised by placing several thicknesses of fine cotton cloth over inlets should be used. This precaution will prevent pipe and boiler scale, as well as other dirt, from entering the bath and becoming lodged upon the rayon.

Extractors should always be kept clean, and their baskets should be lined with clean cotton cloth before bundles of rayon skeins are placed in the machines. Dryer poles should be kept clean and smooth.

Skeins removed from poles should be packed in lined baskets and covered over until required at the winders. To obtain utmost cleanliness in winding, use of machines of the spindleless type or those equipped with oilless bearings is recommended. Winding rayon on old-type winders often results in yarn becoming soiled through contact of operators' hands with spindles.

In twisting, if separators are necessary, use either those made of case-hardened, polished steel or of plate glass, and keep them free of oil and dirt. Separators of soft materials are sometimes worn by yarns, thus permitting the yarns to pick up minute specks of metallic material. These specks do not show up until the yarns are woven and the fabrics dyed. Cases in which such particles of metal have been the cause of small pinholes in finished fabric have also been noted. Of course, not only in soaking, drying, and winding, but also in all further operations, precautions against dirt and spoilage are necessary.

Humidity Control

The fact that rayon is susceptible to moisture and to variations in atmospheric conditions makes it important that all operations be carried on in rooms with controlled temperature and humidity. Extreme variation in humidity during any operation will cause uneven stretch, twist, and appearance of rayon yarns in finished merchandise. So far, research and experience have shown that rayon, to obtain best results, should be processed at a relative humidity of between 50 and 60% with a dry-bulb temperature of about 72° F.

The amount and uniformity of tension applied in the processing operations have a great deal to do with the uniformity of twist obtained. Yet, since each skein and bobbin is run, in the various operations, on separate parts of machines, each operating to a certain extent as an individual unit, it is very difficult to obtain uniform speed and tension of all parts. However, with constant check and correction, a high degree of uniformity in tension can be, and is, obtained.

Various types of winding machines are used in the trade, but they are generally of the silk type, either single- or double-deck. The practice is to run skein to bobbin, which makes for highest efficiency, maximum production, and absence of unnecessary knots and handling. Where winding machines are of the old spindle-type take-up, it will pay to have them revamped to the modern spindleless take-up. This is inexpensive.

In winding, care should be taken to see that all swifts are free-running and weighted equally, and that spindle points (when spindles are used) and spindle brackets are not worn and do not bind. Check the tension of running threads, with the aid of a tension meter, at regular intervals. If any dragging swifts or spindles are located, steps should be taken to remove the cause of the drag.

Ply Yarn Production

Doubling is generally done on machines of the 5B or down-doubler-twister type. Although these machines are built to deliver yarn by unrolling, insurance against unequal stretch due to binding or dragging spools can be obtained by running delivery over-end from spools, and running the yarns over a felt-covered rail to give them a light and uniform drag between delivery spools and take-up rolls. It may be of interest to note at this point that it is both possible and practical to utilize the old double-roll take-up type of 5B machine for twisting two-end yarns requiring one slack and one tight end. All that is necessary is slight alteration of take-up rolls and the running of each of the two ends under one roll only.

Tension control on up-twisters is chiefly dependent upon the flyers. Flyers used are of many makes, types, sizes, and weights; they vary according to the size of yarn being twisted, as well as the amount of stretch desired. No matter what type of flyers is used they should run freely. Where separators are used, special care should be exercised to make certain flyers do not strike them. A good method for assuring uniform tension on all yarns when redrawing is to install drawing-off spindles of the cotton-band spinner type. Tension on all spindles can then be applied by means of a cotton band or tape made fast at one end of the frame, passed under one and over the next spindle, and so on, with tension applied by means of a weight at the other end of the band or tape.

Making Yarns That Sell

Depends on close cooperation between top-maker and spinner

By WEBSTER NORRIS

GOOD YARN making is not a solo effort on the part of the spinner; in it he must have the assistance of a thoroughly competent top-maker. Protection of the mutual interests of these three, and production of yarns that sell and bring repeat orders, depends on proper cooperation by all.

It is true that a perfectly combed top does not exist. Combers themselves admit they cannot produce top slivers which contain less than an average of three neps per yard. But the combers may well ask themselves several questions. Is it possible to obtain better results by closer pinning or by increasing the number of rows through which the wool fibers are combed? Are neps caused by inefficient machines, which allow short lengths of wool to pass forward uncombed? Does the machine need more attention from the standpoint of pinning?

The Mazzetti pinning of combs was welcomed as indicating that new ideas regarding pinning were possible. Although it was not successful, it did stimulate many to action, and we may yet see some modified system of pinning adopted. The staggering of flat pins obliquely is certainly a new way of forcing wool fibers to take a more tortuous route through the pins, and it emphasizes what should be a most obvious fact in combing—the need for individual fiber separation.

Top and Noil Ratio

Top and noil ratio needs also to be considered. Many believe that obtaining a good top and noil ratio means producing a poor spinning top. This is not always true. There are several factors which affect top and noil ratio: first, the position of the feed knives; second, the distance of drawing-off rolls from circles; third, the character of the wool as it comes to the comb. The comber can do little to improve conditions arising from the third item. If wool is badly grown, no skill in combing can give it the ability to spin to high limits; with good wool, very little care is needed to make spinnable tops. Between these two classes is 80% of the wool grown, and in manipulating these the comber is given many chances to show his ability.

Attempts to increase production nearly always result in poorer combing. Much has been written concerning the position of feed knives and their relation to tear, reasons for moving the incline, and the sizes of rolls for different wools; but figures relating to actual combing experience are difficult to trace in literature. A recent experience in combing shows how ineffective some of the motions appear to be. For this test the comb was set to handle fine wool. In the first part of the test each feeding end was tightened; the tear was 9 to 1, top and noil. In the same comb, with the same wool and the same settings, but allowing the feed ends to run slack, the tear became 5 to 1, top and noil. When combing research really gets under way, there will be many problems to be tackled—some similar to the above, and others relating to scouring, carding, and backwashing.

Production of first-class yarns at the lowest possible price calls for knowledge of the lowest quality of tops from which various specific sizes of yarn can be spun. A study of wool quality numbers from this viewpoint reveals some interesting facts. When 70s tops are spun to 70s count, there is an average of 30 fibers in the cross-section of the yarn. If 50s quality could be spun to 50s yarn, there would be 14 or 15 fibers in the cross-section; 40s quality would allow 10 fibers, and 28s would have 3 or 4 fibers per cross-section, when spun to 40s and 28s counts respectively.

Fiber Diameters

These figures indicate there is a definite relationship between fiber diameter and the counts to which the wool can be spun. This relationship may be expressed as follows: If the count of a yarn is multiplied by 20, the reciprocal of the resulting number will give the fiber diameter in inches of the wool that should be used in its production. Any thicker fibers will be too coarse for spinning that particular count. For example, if it is intended to spin 32s count, the maximum fiber diameter of wool which can be successfully used can be calculated as follows: $32 \times 20 = 640$. The reciprocal of 640 is 1/640. Therefore, fibers of 1/640 in. diameter will be required.

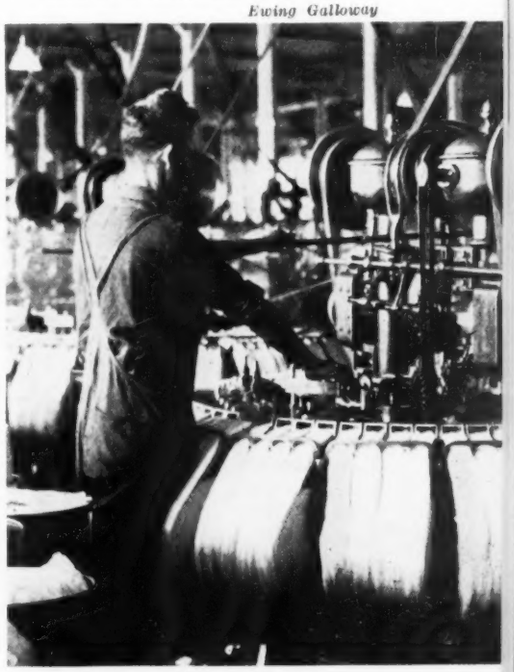
Of course, not all wool tops are required to be spun to their count limit; in fact many weavers have little use for "lean" or limit-spun yarns. Yarns spun thicker than the limit which could be obtained from the quality are much better in appearance and uniformity than those spun out to the limit.

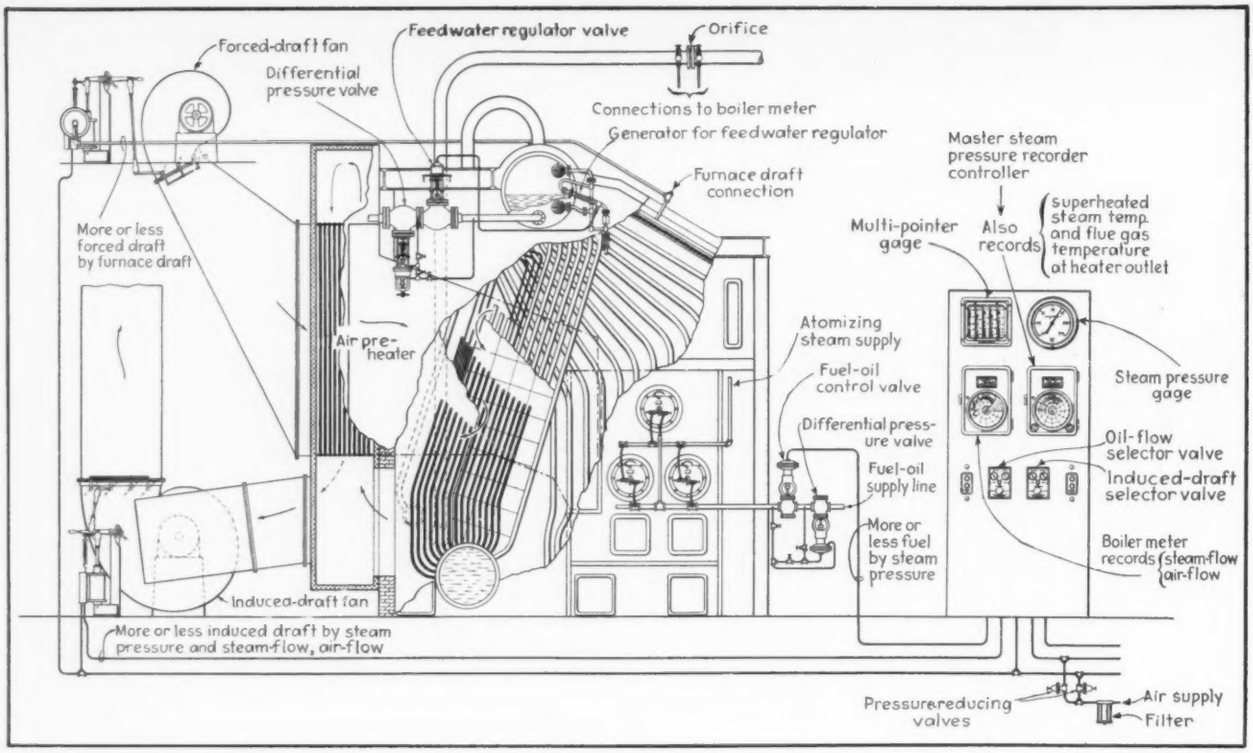
Adequate Machinery Important

In the worsted industry, where so many counts and qualities of wool are asked for, machines are often expected to do more per week than is reasonable, or to process another type of roving than that for which they were made. For best results, however, drawing and spinning machines should be designed specifically for processing the particular quality of wool in use. They should be of the proper size to process the weight roving it is desired to put through them and they should have sufficient capacity to handle the amount of work they are called upon to do.

Good yarn making requires the assistance of a competent top-maker

Ewing Galloway





Bailey Meter Co.

Fig. 1. Diagrammatic layout of automatic combustion-control system on integral-furnace boiler at Sanford Mills.

Integral-Furnace Boiler

With automatic combustion-control system installed recently by Sanford Mills

By FRANCIS A. WESTBROOK

ONE OF THE FIRST boiler plants of its type to be installed in the textile industry has been put into operation recently by Sanford Mills, Sanford, Maine. The unit consists of a new Babcock & Wilcox integral-furnace boiler equipped with a Bailey Meter Co. automatic combustion-control system. Such complete instrument control on a fully automatic basis, is very desirable in a mill of this kind, where the demand for steam in process work is subject to considerable fluctuation. Since it is impossible to control these fluctuations accurately and effectually by manual means, the automatic control system effects substantial operating economies. An advantage of the integral-furnace type of boiler is the fact that although it is adaptable to plants of moderate capacity, it has many of the features formerly available only to large plants. Another advantage is that it can be bought complete as a unit from one manufacturer, thus centering responsibility for satisfactory performance.

The integral-furnace boiler, which is shown in Fig. 1, operates at 455 lb. pressure, with a capacity of 60,000 lb. of steam per hr. It is fired by oil, but can be easily converted so as to be fired by pulverized coal or gas; hence the least expensive fuel found in any locality may be used. The boiler itself is designed to deliver dry steam under varying load conditions. It is equipped with a slag screen formed by the first two rows of boiler tubes, which are staggered and spaced on wider centers than those behind them; this is an important factor in making practicable the use of a wide range of coals. In addition to being provided with this slag screen to prevent fouling of the tubes of the boiler and superheater, the boiler is designed for low draft loss and for cross-flow of combustion gases in three passes over the heating surface, so that maximum heat will be extracted. It is equipped with the self-draining type of superheater. The tubes in both boiler and furnace can be cleaned effectively from the two drums; and the boiler and wall tubes can be replaced individually without removing any other tubes in the unit.

Furnace Construction

The furnace is of the water-cooled type of construction, which effects efficient combustion and economic maintenance. Both the floor and the walls are water cooled. The cooling apparatus is arranged simply; consequently, the cost is consistent with the service for which the furnace is designed. The furnace is of the flat-bottom type to conserve head room, and ash removal is facilitated by an ash pit 2 ft. deep extended across the back, into which ashes may be

hoed or swept by an air or steam lance. A deeper furnace might have been installed, in which case an additional similar ash pit would have been provided at the front. There are only two baffles providing for the three passes of the gases, and since their manner of installation is such that the draft loss is very low, natural draft and existing stacks could have been used satisfactorily.

The integral-furnace type of boiler is particularly adaptable for modernization purposes, since it can be placed in a wide variety of arrangements to suit space conditions and permit its installation with the fewest changes to buildings and structural work. It requires no basement and considerably less head room than other types of boilers of the same capacity.

Air-operated Control System

With this installation, the automatic meter control system, which consists of a master steam pressure recorder-controller and a boiler meter and their composite accessories, performs the function of maintaining the pressure at 455 lb. in the steam header. Control is effected by means of compressed air. A diagrammatic layout of the control system is shown in Fig. 2.

The pressure recorder-controller consists of a sensitive expansion coil which is affected by change in steam pressure, and which operates a master air pilot valve. The master air pilot valve controls the compressed air load, which passes through a standardizing relay, then through a master selector valve. After passing through the master selector valve, the air load branches and passes through the primary air selector valve to the air pilot valve, which operates the mechanism regulating the fuel supply. The other branch passes through the averaging relay, and then through the induced-draft selector valve to the air pilot valve, which operates the mechanism regulating the induced draft.

Following is a brief description of the mechanisms regulating the fuel supply and the induced draft. The mechanism operating the fuel supply consists of a fuel-oil control valve and a differential pressure valve. The air load acts on a diaphragm operating the fuel-oil control valve to supply fuel predetermined as necessary to meet the demand. This sets up a differential in pressure, on either side of the control valve, which acts on a diaphragm operating the differential valve, to regulate the oil pressure. The mechanism controlling the induced draft consists of a compressed-air-cylinder operating dampers to control the induced draft. The piston is counterbalanced by a spring which causes the pilot valve to return to its neutral position following operation of the dampers.

The boiler meter records the steam flow from the boiler and air flow through the furnace. This automatically maintains that predetermined relation between steam flow and air flow which will result in the best performance for this particular installation, and which relation has been determined, by experience, to be most economical for different ratings at which the boiler is to operate. It is adjusted, by means of simple settings, to furnish the amount of excess air required for these ratings. Consequently, when the pressure recorder-controller has changed the damper and fuel-oil valve to keep up the steam pressure, the boiler meter modifies the position of the induced-draft damper so as to furnish the proper amount of excess air to maintain the correct fuel-air ratio. The steam flow and air flow operate their respective mechanisms to control the air supply valve. The air load passes through the air supply valve to the averaging relay, where it joins the compressed air load supplied by the pressure controller-recorder. The resultant of the two compressed-air loads operates the mechanism regulating the induced draft.

Furnace Draft Control

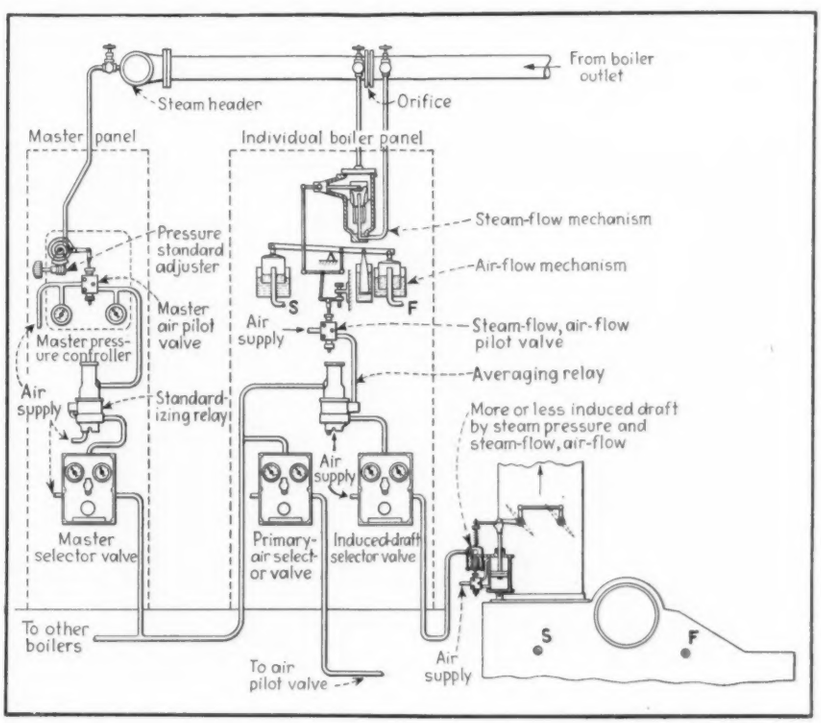
A substantially constant furnace draft is maintained by the furnace-draft control drive. Change in furnace draft is relayed through the furnace-draft connection to a sensitive diaphragm, which operates the mechanism regulating the forced draft. This mechanism consists of an air pilot valve operated by the diaphragm, and a cylinder to which the pilot valve supplies an air load. The air load moves a piston, thereby changing the position of the dampers. The piston is counterbalanced by a chain which causes the diaphragm and pilot to return to their neutral positions following operation of the dampers.

There are oil-flow and induced-draft selector valves which make possible the placing of the boiler under manual control, when desired with respect to its rating. However, this does not interfere with the automatic control features just described.

Feed-Water Regulator

A thermo-hydraulic feed-water regulator and differential feed-water valve are connected to the drum and feed-water line. The regulator operates from variations in the water level, and controls the functioning of the feed water-valve so as to automatically retain a constant water level in the drum.

In addition to the recording meters, there is mounted on the instrument panel, a multi-pointer gage on which are indicated the air-heater inlet pressure, the wind-box pressure, furnace draft, air-heater inlet draft, and air-heater outlet draft. The pressure controller-recorder, in addition to recording the steam pressure, records the temperature of superheated steam and temperature of flue gases at the heater outlet.



Bailey Meter Co.

Fig. 2. Details of combustion-control system

Finishing Symposium

Feature of Committee D-13 meeting in Washington; sub-committee on rayon staple formed

NEED FOR consumer standards and factual labeling of textile fabrics were emphasized at the finishing symposium held in conjunction with the spring meeting of Committee D-13 of the American Society for Testing Materials held, March 9 to 11, in Washington, D. C. That the Society senses this need and is beginning to take steps to meet it was evidenced by the recommendation of the sub-committee on household and garment fabrics that tentative standards be adopted for sheeting, Turkish toweling, and broadcloth. Other features of the finishing symposium included a discussion of permanent finishes from the viewpoint of the manufacturer and the consumer, and presentation of papers on consumer testing of finished textiles, a new system for determining color tolerances in textiles, and a method for determining the degree of deterioration of cotton fabrics during bleaching, dyeing, and finishing.

Out of the meetings of the dozen or more sub-committees, including a newly formed sub-committee on rayon staple fiber and spun rayon yarns, came a number of definite proposals for the adoption of tentative standards and test methods. Discussion at the meeting of the sub-committee on rayon staple, which is under the chairmanship of Kenneth B. Cook, of Manville Jenckes Corp., centered on specifications for standard regain; test methods for determining fiber length, denier, and tensile strength; tolerances for spun rayon yarns; and definitions.

Permanent Finishes

The symposium on finishing started with a discussion, by Kenneth H. Barnard, of Pacific Mills, of permanent finishes from the manufacturers' viewpoint. Mr. Barnard pointed out that there are a great many types of permanent finishes available in various degrees of permanency. In general, a finish is considered permanent on cotton if it shows no appreciable change on repeated washings; on rayon, if it withstands drycleaning. Most permanent finishes increase the strength, and cut down yarn slippage, shrinking, and soiling. Among the various types of permanent finishes are those produced with synthetic resins, cellulose solvents, predissolved cellulose, cellulose ethers, and concentrated sulphuric acid. Almost any special property which the consumer demands can be met by at least one of the products now available for producing these permanent finishes.

Production of these finishes often requires special equipment and well trained operatives, and the cost of materials used is high. The great difficulty from the manufacturers' viewpoint is to convince the customer that the finish is worth the price asked.

Speaking on the same subject from the consumers' viewpoint, Ephraim Freedman, of R. H. Macy & Co., said that the term "permanent finish" is ill-advised, because it is ambiguous, too embracing, and not too truthful. Absolute terms, like fireproof, stainproof, shrinkproof and mothproof, because they overstate the performance or durability of the finish, help build up consumer skepticism and tear down consumer confidence.

Crease-Resistant Fabrics

In the case of crease-resistant finishes, the manufacturer should seek the answers to the following consumer questions: What is meant by crease-resistant finishes? Will it give consumers better or more attractive textiles? Will it make life easier for them? Will it be within the reach of their pocketbooks? Will it keep curtains crisper, furniture covers from creasing, dresses from wrinkling, collars and cuffs from wilting, ties from rumpling, velvets and other pile fabrics from crushing? Will it do these things absolutely or just to a degree, and, if the latter, to what degree? Will it keep clothes and drapes from soiling as rapidly? Will it remain resistant under conditions incidental to its use; or, if the finish will have to be renewed, how often and by whom? Is it capable of undergoing renovation without loss of its effectiveness, and how many such renovating treatments can it take? Is it going to smell bad after awhile? Will it cause the fabric to develop holes? Will it make the fabric tear more readily or wear out faster? Will it cause the material to fade or discolor sooner? How will atmospheric conditions affect it? Does it contain any substances which, when coming into contact with the body will cause irritation or other harmful effects? What should be known about the care of crease-resistant materials? How can one judge between the different grades?

Among the fabric samples displayed at D-13 meeting

William H. Whitcomb, reelected secretary of Committee of D-13

Can stains or spots be removed without impairing the finish? If different types of crease-resistant finishing agents are available and some of these are affected by washing, while others do not withstand drycleaning, how are consumers, commercial laundries, or drycleaners to know?

Information to answer these questions should be developed at the source of manufacture and made available to retailers, consumers, laundryowners, and drycleaners, by means of clear and factual information on labels affixed to the merchandise and by clear and factual descriptions in all literature issued by the manufacturers.

Consumer Tests

Discussing consumer tests of finished fabrics, Miss Nannene Gowdy, of Montgomery Ward & Co., pointed out that frequently new types of fabrics are on the market for several years before standards are promulgated. For this reason, the consumer wants the retailer to test and guarantee finished fabrics. It is necessary to couch specifications in terms which are intelligible to the buyer. There is a great difference in what the manufacturer, the retailer, and the consumer want to know from tests. The retailer wants to know which fabric is the best buy and which will give the most satisfaction to the largest number of consumers. Tests also yield information on which to base advertising claims, check stock against samples, and permit instruction of the consumer in the use and care of the fabric.

The consumer wants to know whether or not the hand, appearance, and color are permanent. She is interested in the effect of sunlight, moisture, and dirt; she needs information on how to care for fabrics—how they should be laundered or drycleaned. She wants to know the probable life of the fabric and the advantages of higher-priced goods as compared with lower-priced products.

An improved method for measuring the fluidity of dispersions of cellulose in cuprammonium solutions was described by R. T. Mease, of the National Bureau of Standards. This method, which makes use of a standard cuprammonium solution and a special type viscosimeter, can be employed to determine whether or not cotton fibers have been damaged in bleaching, dyeing, and finishing. Advantages of the method include the fact that it can be applied to dyed or undyed materials and it is quantitative, making it possible to detect the degree of deterioration.

Dr. Deanne B. Judd, of the National Bureau of Standards, told of the work which is now being done at the Bureau in finding out how to compute changes in color seen by the eye. The study is not yet complete, but it is hoped that it will result in the development of a system for determining color differences in textiles and for setting up specifications for color tolerances.

On Thursday morning the subcommittee on cotton held an informal symposium on cotton quality. General remarks by Dr. R. W. Webb on the 1937 cotton crop were followed by three illustrated papers: "Some Breeding and Production Aspects of Cotton Quality," by H. W. Barre; "Cross-Sectional and Related Structural Features of Cotton Fibers Influencing Quality," by Dr. Enoch Karrer; and "Some Possibilities and Limitations of X-Ray Methods for Measuring the Strength of Raw Cotton," by C. M. Conrad.

Standards Recommended

Recommendations presented by sub-committee sections, other than those already mentioned, and voted to letter ballot, include the following: A regain of 7½% as a tentative standard for cotton yarns and threads; adoption of appearance standards for cotton yarns ranging from 3s to 125s; a tentative revision in the method for determining the amount of sizing in light and medium woven cotton fabrics; a change in the specification for fabrics to be rubberized or pyroxylin coated; a revised specification for diaphragm bursting testers; a tentative method for determining the light fastness of dyed textiles; a revised test method for reinforced asbestos roving; a standard method for the determination of tussah silk; a tentative test method for determining fiber length of wool; and a tentative laboratory method for determining shrinkage of grease wool.

Prof. Herbert J. Ball, reelected chairman of Committee D-13

Other matters discussed at subcommittee meetings included the revision of certain of the definitions of textile terms previously proposed and further additions to the glossary; methods for testing waterproof and water-repellent fabrics; sample-size determinations, clean-yarn determinations, and tuft-length standards for floor coverings; instruments for determining the dynamic characteristics of individual fibers; methods for identifying Lanital; methods for determining luster and degree of mercerizing of woven fabrics and absorbency of toweling; and a statistical study for determining the "number of tests."

Other features of the meeting included the presentation of the Farm Credit Administration's moving picture, "The Marketing of Wool", and visits to the Federal Bureau of Investigation, the Textile Section of the National Bureau of Standards, the Textile Division of the Bureau of Home Economics, the Bureau of Agricultural Economics, the Wool Section Laboratory of the Department of Agriculture, and the Laboratories of the Bureau of Animal Industry.

At the business session, Professor Herbert J. Ball, Lowell Textile Institute, was re-elected chairman of Committee D-13, and William H. Whitcomb was re-elected secretary. R. H. Brown of Parks-Cramer Co., and F. S. Mapes of General Electric Co., were chosen as vice-chairmen. It was announced that a symposium on spun rayon and blended yarns would be held in conjunction with the New York meeting, in October.

Higher Roll Speeds

Produce stronger yarn is conclusion reached from studies of cotton drawing process

By B. B. PEACOCK

THAT INCREASED drawing-roll speed results in an increased strength of the cotton yarn produced, is the startling conclusion reached as the result of studies made recently at the State Engineering Experiment Station of the University System of Georgia, located at Georgia School of Technology. These studies were the first part of an investigation to establish the best arrangement in the drawing process or processes to obtain the highest quality of spun cotton yarn. The studies showed also the differences in characteristics of yarns spun from sliver produced on one process, two process, and controlled-draft drawing.

This investigation was supported financially by the Textile Foundation, Cotton Manufacturers' Association of Georgia, and the State Engineering Experiment Station; and was carried out under the direction of C. A. Jones, Director of the A. French Textile School, Georgia School of Technology; Professors R. L. Hill and D. E. Philpott, of the same school, who assisted in processing details; and Dr. R. A. Hefner, of the Mathematics Department, Georgia School of Technology, who conducted the statistical analysis. The results are reported in Bulletin No. 1 issued by the Experiment Station.

The following abstract of the report outlines the experimental procedure, and gives a discussion of the results obtained, with a detailed list of conclusions based thereon. Picker laps of Georgia Upland $\frac{7}{8}$- to $\frac{15}{16}$-in. cotton, weighing 15.5 oz., were obtained from a mill. These were processed on one card producing approximately 200 cans of 60-grain sliver, which was divided into 28 parts. Of these, 15 parts were run through one-process drawing; 12 through two-process drawing, and 1 through the controlled-draft drawing.

In the one-process drawing the stock was run through three different types of drawing rolls at five different speeds, while in the two-process drawing the stock was run through three different types of rolls at four different speeds. Only one speed and one type of roll was used on the controlled-draft drawing process.

A total of 28 varieties of drawing sliver was produced. All drawing sliver was processed through the same slubber and same intermediate, using eight spindles on each.

Half of the intermediate stock was processed through the fine frame, and spun on a regular-draft spinning frame into 20s yarn with warp and filling twists; and the remainder was spun, as intermediate roving, on a long-draft spinning frame into similar yarn with similar twists; 56 lots were spun with each twist.

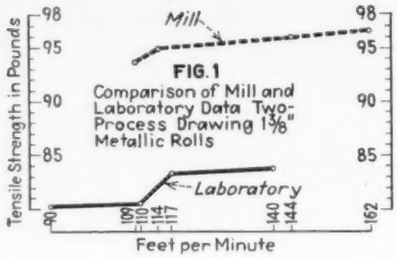
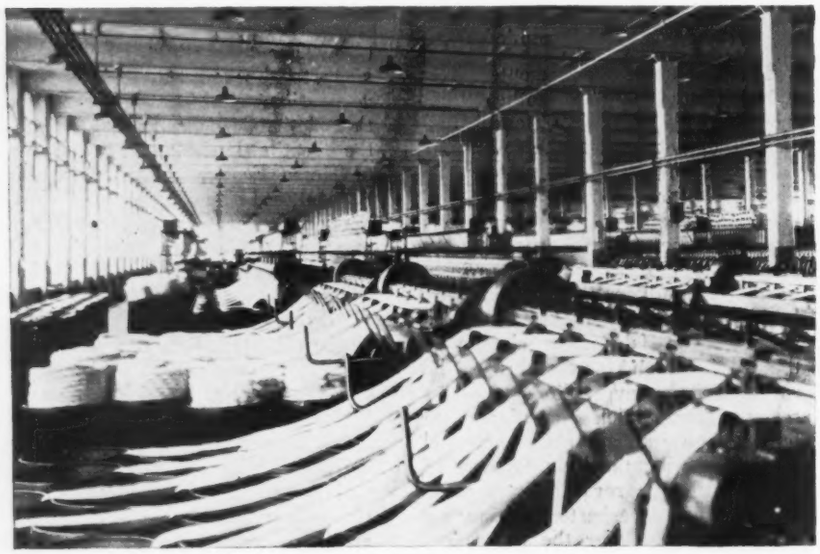


FIG. 1 Comparison of Mill and Laboratory Data Two-Process Drawing 1⅜" Metallic Rolls

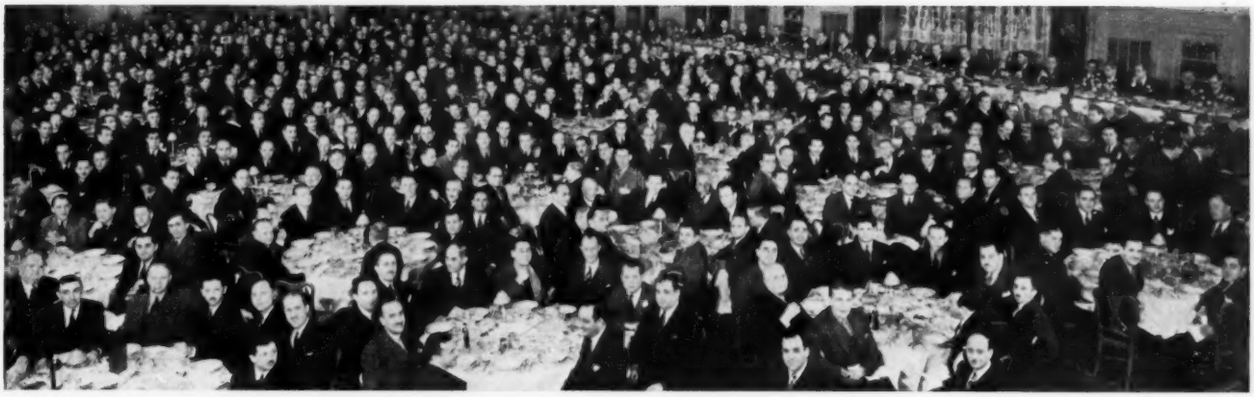
Results obtained in this study are compared with those obtained in a mill test in Fig. 1. Results of the mill test substantiate the trend indicated by the results of the experimental test with respect to the $1\frac{3}{8}$-in. metallic rolls. Superior breaking strength of mill yarn probably is due to higher twist in the yarn, differences in methods of testing, and difference in grade and staple of cotton used. These results do not agree with generally accepted theories in commercial practice. Practical mill men have long held to the theory that increasing the speed of the delivery roll on the drawing frame causes a decrease in tensile strength of the yarn finally spun. The results of these tests tend to disprove such a theory.

Detailed conclusions based on the results obtained are as follows:

1. Increased drawing roll speed results, in general, in an increased tensile strength of yarns produced.
2. At very high roll speeds, the yarn spun from sliver produced with $1\frac{3}{8}$-in. metallic rolls has a higher tensile strength than does yarn spun from sliver produced with other types and sizes of rolls at the same speed.
3. Roll speeds for maximum tensile strength have not been determined.
4. At ordinary mill speeds, the $1\frac{1}{8}$-in. cork and $1\frac{1}{8}$-in. metallic rolls produce sliver which gives uniformly stronger yarn than do $1\frac{3}{8}$-in. metallic rolls.
5. There is apparently no significant difference in results obtained by using $1\frac{1}{8}$-in. metallic rolls and $1\frac{1}{8}$-in. cork rolls.
6. Statistical analysis indicates that the usual number of mill samples taken for testing is insufficient to produce consistent results.



Drawing process may be modified as result of studies just completed



Busy Outerwear Conclave

New York convention in favor of modernizing 1930 rules

THREE accomplishments were foremost when the knitted outerwear industry's annual conclave in New York came to a close about midnight March 22, after some 36 hours of crowded activity. These accomplishments were: (1) Approval of revisions in the industry's fair trade practice code of 1930, bringing that document up to date; (2) adoption at a trade practice conference of rules for the Infants' and Children's Wear Group which rules now go to the Federal Trade Commission; (3) creation of a committee to study and act upon the growing problem of manufacture by contract.

Attracted by an unusually important program, nearly 1,000 outerwear men were in New York attending the various events. Preeminent among the activities, which included a busy round of committee meetings and group luncheons, were three gatherings: the Federal Trade Commission hearing on the infants' and children's wear rules, held Monday afternoon, March 21, at the Hotel New Yorker; the annual open meeting of the board of directors of the National Knitted Outerwear Association, Tuesday afternoon, March 22, at the Hotel Astor; and the association's annual banquet Tuesday evening at the Astor.

Proceedings moved swiftly and harmoniously at the infants' and children's wear rules hearing; this meeting was presided over by Commissioner R. E. Freer. The proposed rules were formally presented by Harold R. Lhowe, Executive Director of the National Knitted Outerwear Association. Various speakers suggested minor revisions most of which were incorporated in the text. Among objectionable practices prohibited by the rules are: payment of brokerage and commission not directly connected with sale of goods; advertising or promotional allowances as special privilege to certain customers; price discrimination, misbranding, etc.

In addition to the need for revision of the 1930 rules and for study of the contract system, numerous other important problems were analyzed at the board meeting of the association at the Astor on Tuesday. This gathering has come to assume the status of an industry meeting. Ingram Bergman, president of Bergman Knitting Mills, presided in the absence of Adolf J. Farber, association president. Among the chief speakers were Harold R. Lhowe, executive director, Sidney S. Korzenik, secretary of the association, and various group chairmen, including Fred Frankel for Cleveland, Samuel Kaplan for New England, H. H. Cohen, for Philadelphia. Generally speaking the group chairmen reported adversely on business conditions.

Mr. Korzenik's report afforded a comprehensive picture of current conditions in the industry as a whole. Several points were emphasized by the secretary, among these being: Statistics——the Department of Commerce has agreed to give outerwear a separate classification in knit goods statistics, thus helping to meet the industry's long-felt need of factual data; merchandising — style changes have created vital problems, particularly as regards use of woven fabric in trunks, sweaters and combination garments, but ingenuity of knitters is developing new products to fill the gap; labor—disturbances of the more militant type of 1936 and early 1937 appear to be at least temporarily past.

Mr. Korzenik referred but briefly to the contract system. Spirited discussion of this problem followed and a resolution was adopted authorizing the association's board of directors to create a permanent committee to develop a plan to solve this problem. It was specifically recommended that effort be made first to restrict labor conditions and machine hours with a view to bringing production into closer parallel with demand; second, to consider means of augmenting the public's knitwear requirements; and third, to consider means of enforcing such rules as may be determined upon. This resolution was adopted.

Mr. Korzenik also read reports on tariff and legislation. The legislative committee report included a complete revision of the industry's 1930 trade practice rules, which revision was approved with some minor corrections. These rules now go to the Federal Trade Commission for action. Among the chief new provisions in the rules are those which prohibit (a) wholesalers from representing themselves as mills; (b) unfair price discrimination; and (c) varied types of discriminatory differentials.

The annual banquet, always a mammoth gathering of the outerwear men, had particular significance this year as it marked the twentieth anniversary of these banquets.

Staple Cotton Fabrics

By JOHN HOYE

Fabric Technician with W. Harris Thurston, New York

This twenty-eighth instalment of Mr. Hoye's series of articles on staple cotton fabrics—which began in the January, 1936 issue—continues his discussion of Turkish Toweling (terry cloth).

TURKISH TOWELING *(Continued)*

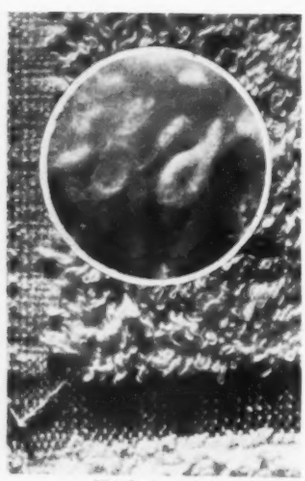
Single-Loop or Double-Loop Towels

Most of the standard towels produced are of the single-loop or double-loop types. They are made in many different qualities, and sometimes are sold on a basis of weight in pounds per dozen; that is, the weight before bleaching. The finished weight is not stated; but usually is estimated by allowing about 10% for an average loss in bleaching.

In single-loop towels, each warp pile yarn is made to form a loop singly, and in between each single loop, a ground warp yarn is interlaced with the filling yarns. One pile warp end forms a loop on one side of the cloth, and the next pile end forms a loop on the opposite side of the cloth. The ground warp yarns interlace with the filling yarns to form the ground fabric.

In double-loop towelings, the warp yarns which form the terry pile are drawn through the harnesses two to an eye or heddle, and therefore run together in pairs (as in the oxford or flat duck). Therefore, when these warp pile yarns are beaten up to form the loop pile, two loops (or double loops) are formed side by side, at the same time. In between each pair of loops, ground warp yarn is woven with the filling yarns to form the body of the cloth or ground fabric. One pair of pile warp ends forms a double loop on one side of the fabric, and the next pair of warp pile ends forms a double loop on the opposite side.

A variation of the standard towel is the athletic rib towel. In this towel the loops are so spaced as to form pronounced stripes or ribs running lengthwise. The loops usually are spaced in groups of four, as follows: four loops on face, four loops on back, four ground ends to the repeat. They can be made with single or double loops, and these can be made of single or ply yarns. When ply yarns are used, the towel has a harder texture and is referred to sometimes as a friction towel or household friction towel. Another friction towel is an imported linen (two-ply) yarn towel, which comes in the unbleached or half-bleached state. This type of friction towel has an exceptionally hard texture not found in a cotton yarn towel, and is used mainly for brisk rub-downs and massaging.



Woodward Baldwin & Co.

Fine yarn terry towel, single thread (loop), plain colored border, bleached, approx. thread count 72x44 (36 pile, 36 ground) carded single yarns

Fine-Yarn and Ply-Yarn Towels

Fine-yarn towels are usually made with single yarns and with single loops. The yarns used are not really fine yarns—the term is used in the trade to indicate that yarns are finer than those ordinarily used in towels. Compared with the standard towels, they are constructed with a higher pick and sley, and a longer loop, thereby producing a softer and denser surface. They are more expensive than other Turkish towels, and are often used for guest towels.

Ply-yarn towels usually are woven with single loops, and are the strongest type of towels made. In this type, ply yarns are used in both the ground warp and the pile warp, and single yarn ordinarily is used for the filling. The majority of ply yarns used are yarn bleached. Ply yarns are used mainly in jacquard and other fancy towels.

Towel Classifications

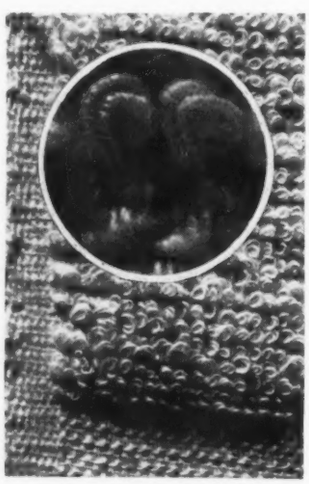
Towels can be classified according to style and design as follows: (1) all white, (2) plain colored border, (3) reversible, and (4) fancy border.

The all-white, reversible, and fancy-border types, in addition to being made plain terry, also are made in dobby and jacquard woven patterns. These weaves include towels of small over-all designs, large decorative designs, as well as woven initials and names made for hotels, clubs, institutions, etc. The fancy-border towels also are made with either dobby or jacquard designs. One of this group is the mitcheline woven border, in which a distinct raised design effect is formed by the use of an additional heavy (colored) filling yarn. For the colored effect in the plain terry colored border type, a box loom is used. Another type of fancy-border towel includes those made with chenille yarn borders, which, as a rule, are imported towels. In the weaving of the border, the chenille (filling) yarn usually is inserted by hand, by the weaver, in such a manner as to form the desired pattern.

Terry Bath Mats

A heavier type of terry toweling is made for bath mats. These usually are made of coarse ply yarns in order to obtain the weight, bulk, and strength required.

This Turkish toweling section of Mr. Hoye's series, which began last month, will be continued in the next issue.



Standard terry towel, double thread (loop), unbleached, thread count 60x32 (40 pile, 20 ground) carded single yarns

TEXTILE WORLD'S GUIDE

To the Knitting Arts Exhibition

DETAILED descriptions of the booths at the Thirty-Fourth Annual Knitting Arts Exhibition, Philadelphia, Pa., April 25 to 29, are given on this and following pages. In the report of each individual exhibit which has been announced to date are a list of the products which the exhibitor has chosen to display, booth numbers and representatives.

Aberfoyle Mfg. Co., Philadelphia. Booths 307, 308, 321, 322, 332, 333. Durene yarn. Rep.: J. P. Holt, E. L. Dale, H. M. Detwiler, Harry Buckley, Robert W. Yeabsley, Frank G. Miller, James J. Neil, James A. Holt, Elliott J. Neal, Claude D. Gott, L. A. Stead, James F. McCrudden, W. T. Cheatham, Walter C. Brown, W. H. Crenshaw, E. F. Golden, F. W. Hancock, Jr., Douglas A. Neil, J. S. Kenrick, J. R. Kenworthy, Nelson L. Hill, George W. Herrick, Jr.

Adamson Bros. Co., Inc., New York, N. Y. Booths 106–109. Lastex yarns and finished products. Rep.: P. Linke, Joseph Fodor, Wm. Barnhardt.

Adelphia Textile Co., Philadelphia. Booth 376. Resist decorative yarns for hosiery; seaming and looping threads; double-resist-dyed acetate, Indanthrene dyed rayon, and block-dyed yarns. Rep.: James T. Hunter, Edward B. Steinmetz, Clarence Evans.

Allentown Bobbin Works, Inc., Allentown, Pa. Booth 215. Bobbins and spools with heads of fiber, Bakelite, aluminum, and stainless steel; featuring special spools with fiber heads permanently secured to barrels; also bobbins and spools with latest development in fiber colors; show 25-year old spools and bobbins still in service. Rep.: H. W. Mack, B. F. Mack, H. C. Mack.

American Bemberg Corp., New York. Booths 279, 280, 289, 290. Bemberg yarns and fabrics. Rep.: Dr. Werner Schlie, Theodore Wood, Thomas H. Johnson, H. A. Chapell, and Harold Z. Heuston.

American Enka Corp., New York. Booths 223, 224. Enka rayon yarns and fabrics; feature "fashion approved" quality tag for quality merchandise. Rep.: H. H. Anning, J. A. van Laer, E. W. Martin, R. J. Mebane, R. Faison.

American Rolling Mill Co., Middletown, Ohio. Booths 22, 23. Stainless steel dyeing, bleaching, and wet finishing equipment. Rep.: John H. Faunce, Jr., R. C. Cunningham, W. K. Jackson, and F. S. Campbell.

American Safety Table Co., Inc., Reading, Pa. Booths 420–423, 434, 435. Seaming tables, looping tables, individual motors, collar machines, and button sewing machines. Rep.: Louis Frankel, M. T. Voigt, Ben Greenawalt, Henry P. King.

American Thread Co., New York. Booths 221, 222. Cotton and mercerized threads for all purposes. Rep.: J. W. Kennedy.

American Viscose Corp., New York. Booths 309, 310, 319, 320. Rayon yarns and knitted fabrics. Rep.: M. H. Morse, and T. H. Andrews.

American Vitos Co., Inc., New York. Booth 50. New machine for mending runs and ladders in hosiery, featuring new type air-driven needle. Rep.: A. de Saint Maurice, W. S. Sturgill, Jr.

American Wool & Cotton Reporter, Boston. Booth 9. Textile publishers.

American Yarn & Processing Co., Mount Holly, N. C. Booths 388, 389. Combed and carded mercerized yarn. Rep.: G. W. Thomas, H. T. Cosby, Tom Moore, E. W. Wood, E. J. Holbrook, T. H. McKinney, Edwin Hutchison, E. F. Redding.

Edward R. Ammon, Inc., Reading, Pa. Booth 37. Inspecting and testing equipment for hosiery; featuring completely automatic action. Rep.: Edward R. Ammon.

Joseph Amon, Rahway, N. J. Booth 282. Moistening boxes, conditioning troughs, knitters' benches, topping tables, mending tables, work boxes, mill supplies. Rep.: J. Amon, R. H. Therrell, L. E. Ott.

Arrow Needle Co., Manchester, N. H. Booth 8. Latch needles. Rep.: Donald A. McDonald, Gomer S. Dillon, George L. Heaton, Jr.

Atwood Machine Co., Stonington, Conn. Booths 206, 207, 212, 213. Featuring new Atwood twister, new Atwood "5B" and modern "Stonington" winder, all in operation. New Atwood Twister has improved twist driving unit with a 5 to 1 reduction, 100% ball bearing with silent-chain drive running to the take-up shaft; also new sliding motor drive. Rep.: F. R. Hoadley, A. L. Lewis, T. Dewhurst, F. Sails, J. R. Breen, R. F. Lenihan, W. R. Gordon, H. B. Arundale, E. R. Duncklee, H. Morton, L. H. Cornell.

TEXTILE WORLD will maintain headquarters in booths 114–119 at the Knitting Arts Exhibition Philadelphia, April 25 to 29. Cordial invitation is extended to visitors to make this booth their business headquarters while in Philadelphia.

Barkon-Frink Tube Lighting Corp., Long Island City, N. Y. Booth 70. Color matching lamps, utilizing carbon dioxide gas, including new table-model lamp for laboratory work. Rep.: Frank W. McGinnis, K. Ronald Scribner.

Bliss Fabyan & Co., Inc., Philadelphia. Booth 426. Cotton yarns and knitted fabrics. Rep.: J. J. Klumpp, M. P. Glynn, Jr., Thos. Park, W. B. Longgley, S. F. Humphreys, D. F. Swain, R. H. Dillmore.

Boger & Crawford, Philadelphia, Booths 273, 274, 295, 296. Mercerized yarn. Rep.: R. C. Boger, E. T. Boger, A. H. J. Boger, Harry H. Haff, T. F. Haigh, J. J. Nevins, C. Richard Beck.

Boshamer & Co., Philadelphia, Pa. Booth 43. Carded and combed knitting yarn; featuring spun glass exhibit. Rep.: H. M. Boshamer, Cary C. Boshamer, and Harry Graeif.

H. Brinton Co., Philadelphia, Pa. Booths 142–147. Circular knitting machinery. Rep.: H. S. Horrocks, W. H. Allerton, S. B. Bittle.

Bruegger Winding Co., Philadelphia, Pa. Booths 164, 165. Three types of patented skein swifts; two new cake swifts for overend feeding of rayon; Lastex swift preventing overtensioning of rubber-covered yarns; patented high-speed spindle-less winder. Rep.: Albert Bruegger, Will A. Dobler.

H. W. Butterworth & Sons Co., Philadelphia, Pa. Booths 64-66. Stokes-Butterworth staple fiber cutter in operation; machine cuts wool, silk, flax, rayon, etc., into lengths from ¼ to 6 in., six strands at a time, up to 500 lb. per hr. so that these materials can be spun on cotton and wool systems. Also large elevation of a Tube-Tex Range. Rep.: Harry W. Butterworth, Jr., W. E. H. Bell, Albert Molt, and Mortimer Cohn.

Cannon Mills, Inc., Philadelphia, Pa. Booths 390, 391. Knitting yarns. Rep.: S. M. D. Clapper, H. E. Aken, C. Vernon Albright, H. R. Barker, J. C. Bartlett, H. Crumbliss, C. H. Fenn, M. B. Foil, and C. F. Peffer.

Cheney Bros., New York. Booth 437. Spun silk and mixture yarns and fabrics; featuring exhibition of seriplane for testing raw silk. Rep.: W. Smith, K. B. Blake.

Cidega Machine Shop, Inc., New York. Booth 69. Featuring 39½-in. Cidega knitting loom type "B" in operation; also fabrics made thereon. Rep.: Bruno Deri, H. L. Justman, Sebastian Gangi, Joseph Ciotta.

Clover Leaf Mfg. Co., Honesdale, Pa. Booth 3. Spools and bobbins used for winding, twisting, warping, and knitting silk, rayon, cotton, and wool yarns. Featuring large-package principle. Rep.: R. P. Bennett, W. A. Spencer, Jr.

Columbia Narrow Fabric Co., Shannock, R. I. Booths 204, 205. Elastic webbing. Rep.: G. P. Clark, N. E. Randall, William L. McDonald, Edwin Martin.

Continental-Diamond Fibre Co., Newark, Del. Booth 89. Fiber receptacles, roving cans, fiber trucks, loom parts, conditioning trucks, and textile handling equipment. Featuring Dilecto conditioning truck, glass-smooth roving cans. Rep.: Frank Cantwell, W. A. Krebs, H. Woolen, H. Williamson, LeRoy Simmons, Russell Silk, N. N. Wright, F. K. Simons, F. Cooper, W. R. Elsenhans, A. J. Fischer, Sam Turner, E. W. Steedle.

Charles Cooper Co., Inc., Bennington, Vt. Booths 364, 365. Knitting machines, spring and latch needles, underwear and outerwear fabrics. Rep.: W. T. Barratt, John J. Hayes, Raymond Rogers.

Cotton, Atlanta, Ga. Booth 63. Textile publishers.

Darlington Fabrics Corp., New York. Booth 62. Featuring new "Darleen" elastic yarn for weaving and knitting trades. Rep.: Fred Schloss.

Davison Publishing Co., Ridgewood, N. J. Booth 170. Textile publishers.

Dixie Mercerizing Co., Chattanooga, Tenn. Booths 245–248. Natural and mercerized knitting yarns. Rep.: G. R. West, Jr., J. B. Frierson, Jr., A. K. Johnson, E. R. Kimball, D. O. Blevins, S. L. Diggle, Fred Lemmond, F. W. Frank, A. G. Symonds, E. M. Townsend, Jr., T. J. Tighe.

Dubied Machinery Co., New York. Booths 424, 425, 432 and 433. Double-

lock full-automatic links-and-links Universal machine, Type CAL; also high-speed double-lock full-automatic flat power machine, Type RAL, and Type DUX hand-knitting machine. Rep.: G. Sandri, M. Wolf, and E. Hafner.

Duffy Silk Co., Buffalo, N. Y. Booths 396, 397. Thrown silk. Rep.: C. G. Duffy, Jr., Paul Hemmerich, C. Walter Seidel, Carl A. Lorenz, Jr.

E. I. du Pont de Nemours & Co., Inc., Rayon Div., New York. Booths 230, 231, 260, 261. Rayon yarns and fabrics made therefrom. Rep.: C. G. Hookey.

Duplan Silk Corp., New York. Booths 51, 52. Commission throwing. Rep.: G. Friedlander, W. S. Wheeler, Jr., H. H. Cannon, R. H. Griffith, G. E. Ward, D. L. Ryan.

John A. Eberly, Reading, Pa. Booths 166, 179. See **Franklin Needle Co.**

Ewing-Thomas Corp., Chester, Pa. Booths 38, 39. Thrown silk, mercerized yarns, Metro-shade yarns, and fabrics made therefrom. Rep.: J. L. Rankin, H. A. Stafford, J. B. Pope, David Thomas, W. J. Crummer, C. V. Albright, J. C. Bartlett, H. E. Aken, H. R. Barker, Henry Crumbliss, C. H. Fenn, M. B. Foil, J. O. Foil, C. F. Peffer, G. E. White.

Fairchild Publications, New York. Booths 80–82. Textile publishers.

W. F. Fancourt & Co., Philadelphia, Pa. Booth 249. Soaps, oils, and specialties. Featuring Aquapel, one-bath product for splashproofing and finishing hosiery; also Fanco Dulzit, a delusterant which, when used with Aquapel, dulls and waterproofs in one operation. Rep.: W. E. Fancourt, Jr., W. F. Fancourt, 3d, Chas. T. Harvey, Howard A. Virkler.

Fidelity Machine Co., Philadelphia. Booths 270–272, 297–299. Tubular knitting machines, three-carrier back winders, yarn selectors and knot tyers, braiding machines, fabric testing machine, strap-cutting machine, and pocket creasing equipment; featuring four-feed Universal ribbers with elastic laying-in attachments for self-supporting rib anklets. Rep.: H. W. Anderson, George Collar, E. A. Cordin, A. B. Davis, S. B. Blaisdell.

Filatex Corp., New York. Booths 6, 7. Filatex-covered latex yarn and products made therefrom. Rep.: H. F. Skolzenberg.

J. A. Firsching & Son, Utica, N. Y. Booths 358, 359. Automatic length-cutting, counting, and laying-up machine in operation; Wonder bias collarette and strip cutting machine. Rep.: J. A. Firsching, Sr.; Bob Firsching.

Fletcher Works, Inc., Philadelphia. Booths 171–174. Extractors and throwing machinery, including Apex double-deck twister, duplex doubler twister, Simplex double-deck winder; and Whirlwind and standard extractors. Rep.: R. J. Bartholomew, C. W. Moore, F. Schaum, W. H. Rometsch, Jr., J. M. Crozier, F. W. Warrington.

J. B. Ford Sales Co., Wyandotte, Mich. Booth 352. Textile chemicals. Feature saponification of acetates and sterilizing and deodorizing process for prevention of mildew. Rep.: F. S. Klebart, H. E. Moyer, J. W. Turner, James F. Flaherty.

Foster Machine Co., Westfield, Mass. Booths 346, 347, 362. Cone winding machines for winding silk and synthetic yarn for knitting and warping; featuring attachments for controlling density of silk cones. Rep.: D. W. Bridgman, H. E. Swift, H. A. Cadle, J. E. Wood.

Franklin Needle Co., Franklin, N. H. Booths 166, 179. Knitting machine latch needles, sinkers, points and guides, and other accessories. Rep.: Geo. L. Hancock, John A. Eberly, V. L. Eshelman, Goodwill MacFadyen, A. L. Eshelman.

Franklin Process Co., Philadelphia. Booth 419. Natural and dyed knitting yarns. Rep.: B. S. Phetteplace, C. Ralph Ewing, W. F. Wolfe.

Franklin Rayon Corp., Providence, R. I. Booth 196. Rayon yarns and fabrics. Rep.: T. L. Power.

Friedberger-Aaron Mfg. Co., Philadelphia, Pa. Booth 21-A. Elastic textiles. Featuring new designs in waistband elastics for tuck-stitch and rayon undergarments; also Lastex improved lace webs for knee-length, over-the-knee hosiery, and anklets. Rep.: Guy C. Tanner, Joe Stone, J. W. Brown, Joseph Speitel, George Miller, Bill Barnhardt, John Decker.

General Electric Co., Schenectady, N. Y. Booths 180–182A. General items of electrical equipment for use in the textile industry, including motors, control, etc. Rep.: F. C. Smith, J. W. Sholder.

General Electric Vapor Lamp Co., Hoboken, N. J. Booths 182B–184. Latest developments in gaseous discharge lighting, including Cooper Hewitt industrial units, Mazda combination units, and Type H mercury-vapor units. Rep.: Chas. F. Strebig, D. R. Grandy, W. R. Flounders, R. B. Chipman, F. Moos, L. F. Gerisch.

General Hosiery Motor-Mend Corp., New York. Booth 244. Electric hosiery repair machine in operation on women's full-fashioned hosiery. Rep.: C. E. Mandelick.

Globe Dye Works, Philadelphia, Pa. Booth 71. Dyeing of cotton, rayon, and novelty yarns. Rep.: Horace T. Greenwood, Jr., G. T. Moore, Wm. Goodis, F. V. Traut, W. J. Henne.

Grand Rapids Textile Machinery Co., Grand Rapids, Mich. Booths 159, 160, 185, 186. Machinery for dyeing, finishing, cutting, pressing. Following equipment displayed: Roto press machine for pressing athletic shirts, underwear, etc.; garment finisher for pressing rayon or glove silk underwear also for shaping tuck-stitch garments; Universal finishing machine which steams, spreads, calenders and folds at the same time; general upright finisher equipped to finish tubular fabrics without distortion; sample dryer for drying, steaming, matching, etc.; extractor loader. Rep.: W. H. Shields, W. F. Moon, M. F. Shields.

Grove Silk Co., Scranton, Pa. Booths 12, 13. Thrown silk. Rep.: G. J. Schautz, Sr., A. G. Schautz, W. L. Schautz, W. T. Cheatham, D. O. Blevins, Clarence Asay, G. J. Schautz, Jr.

Gunze Silk Corp., New York, N. Y. Booths 56, 57. Raw silk exhibit. Rep.: I. Haratani, G. Seki, E. F. Croasdeale, B. Berenson.

Hampton Co., Easthampton, Mass. Booths 238–241. Cotton and rayon yarns. Rep.: Hugh McConnell, R. B. King, J. S. Blodgett, F. B. Handy, F. W. Kingsley, R. B. Lake, Wm. P. McCulloch, B. H. Rehbaum, W. Herbert Smith, Walter T. Forbes, Jr.

Oscar Heineman Corp., Chicago. Booths 344, 345. Silk and rayon knitting yarns. Rep.: F. E. Morey, R. H. More, L. Wotan, D. G. Brewster, W. J. Bieberle, C. D. Gott, N. P. Murphy.

Hellwig Silk Dyeing Co., Philadelphia. Booth 281. Dyed yarns. Samples of direct-dyed and resist-dyed silk; weighted and pure dye; rayon and novelty yarns; hosiery, neckties, sweaters. Feature acetate yarns of colors that will stand cross-dyeing and bleaching. Rep.: R. M. Gutekunst, W. J. Gutekunst, H. C. Gutekunst, and G. A. Smith.

Hemphill Co., Pawtucket, R. I. Booths 124–129. Knitting machines. Featuring Banner machines for automatic self topping—one knitting a true rib 1 x 1 top and the other knitting cuffs with elastic courses; new machine for children's anklets and socks, which knits both Banner wrap and elastic yarns in the same course; Banner double sole trimmer will be shown on an 8-step wrap-stripe, 3½ in., 220-needle, 48-gage machine with horizontal striper and three-color clocking; and on a 40-color wrap-stripe machine with heel and toe tipping features; special Banner machine knitting rugged, coarse-gage half-hose similar in style to the current European imports will feature both wrap-stripe and sinker-reverse plating in the pattern; featuring also a new method of reverse plating. Rep.: Alfred L. Hutton, Jr., Joseph D. Hobson, George McDowell, James McDowell, H. G. Gross, Robert Quinlan, Arthur Pelkey.

John W. Hepworth & Co., Inc., Philadelphia. Booth 225. Looping machines in operation. Rep.: George Keyser, Jacob J. Sander.

Louis Hirsch Textile Machines, Inc., New York. Booths 232–234, 257–259. Karl Lieberknecht full-fashioned hosiery machine equipped with new automatic welt turner. Rep.: E. H. Hirsch, E. Ruckel, Mr. Friedman.

Alfred Hofmann, Inc., West New York, N. J. Booths 342, 343, 366, 367. Knitting machines. Samples of HSU full-fashioned single-unit stockings. Rep.: Alfred Hofmann, Carl E. Weinberg, C. A. Kroenig, Peter Schoenster, Hans Wirth.

Hosiery Patents, Inc., Lansdale, Pa. Booths 157, 158, 187. Demonstrating Flexy carriers on six-section full-fashioned machine with latest attachment. Rep.: Benjamin Subin, Frank Weisbecker, Herbert Buskirk, James Destephen.

Howes Publishing Co., New York. Booths 156, 188, 189. Textile publishers.

Industrial Dryer Corp., Stamford, Conn. Booths 14, 15. H-W conditioner and twist setter, featuring complete automatic control, patented construction which insures dry ceiling at all times, water-vapor system operation, uniformity of air distribution; leak-proof nickel-clad floor. Rep.: C. M. Kitzmiller, H. B. Foulder, F. W. Caesar, G. D. Millspaugh, J. R. Tutt.

Industrial Machine Corp., New York. Booths 413, 414. Federal throwing machine. Rep.: Harry Sweetbaum, G. H. Rees, W. W. Patten.

Industrial Rayon Corp., Cleveland, Ohio. Booths 92–95. Rayon yarn and tubular knitted fabrics; featuring fall styles in gowns, slips, pajamas, and house coats. Rep.: D. S. Klein, C. W. Carvin, A. A. Schoenberger.

International Nickel Co., Inc., New York. Booths 16, 17. Mill and fabricated forms of Monel metal dyehouse equipment. Rep.: E. A. Turner, C. J. Bianowicz.

Loyal T. Ives Co., New Brunswick, N. J. Booths 192, 193. Spring-beard needles, sinkers, jacks, and other parts used in knitting machines. Rep.: T. Whitlock, E. A. Quint, H. W. Thomas, William W. Heath, and R. Bergen.

Jacquard Knitting Machine Co., Inc., Philadelphia. Booths 379, 380, 401, 402. Circular Jacquard knitting machines; also sample garments. Rep.: H. Albertman.

Jasper-Groz Needle Co., Inc., New York. Booth 371. Latch needles made by Groz-Beckert, Kom.-Ges., Ebingen and Chemnitz. Rep.: E. W. S. Jasper, E. L. Jasper, D. J. Meehan.

Johnston Mills Co., Philadelphia. Booths 287, 288. Cotton yarns. Rep.: J. W. Ferguson, W. W. Peters, W. J. Yates, Jr., F. N. Belk, W. B. Phelps, Jr., R. M. Bechtel, and J. S. Wilcox.

W. H. & F. Jordan, Jr. Mfg. Co., Philadelphia. Booths 24, 25. Textile oils, finishes, and specialties. Rep.: Canfield Jordan, H. B. Dohner, R. A. Bruce, and J. T. McGrogan.

Jordan Mills, Inc. of Columbus, Ga., New York. Booth 357. Colored cotton-spun yarns in direct, developed, and sulphur colors. Featuring colored cotton-spun blends of cotton, rayon, acetate, and wool. Rep.: W. N. Moore.

Kahn & Feldman, Inc., New York. Booth 214. Thrown silk. Featuring high-twist yarns. Rep.: Nathan Lewis, R. A. Adams, Joseph O'Donoghue, C. W. Seidel, Jack Kahn, Gerald Frank, C. W. Causey, French Campbell, Jr.

Kaumagraph Co., New York. Booths 102–105. Dry transfers, lithographed packing, embossed seals; Kaumagraph new improved iron for transfer application; Kaumark stamping ink, Transol solvent. Rep.: G. M. Porges, S. W. Porges, A. F. Dooley, J. L. Reeves, H. A. Keech, D. O. Blevins, W. P. Raiford.

Laconia Needle Co., Laconia, N. H. Booth 216. Latch needles, both screw rivet and rivetless types. Rep.: A. B. Sanborn, H. D. Sanborn, Charles B. Paulus, W. H. Groat.

W. T. Lane & Bros., Inc., Poughkeepsie, N. Y. Booth 309. Canvas dyehouse trucks, baskets for use of loopers, seamers, ribbers, etc., and canvas shipping hampers for transferring goods be-

tween plants. Rep.: R. T. Lane, J. M. Baker.

R. K. Laros Silk Co., Bethlehem, Pa. Booths 58, 59. Commission throwsters. Rep.: R. K. Laros, G. A. Fenton, S. F. Burtis, J. L. Gross, J. M. Harris, P. Wilson and H. H. Huguenot.

Laurel Soap Mfg. Co., Inc., Philadelphia. Booth 211. Textile soaps, oils, and finishing compounds; fabrics treated with various Laurel finishes. Rep.: C. E. Bertolet, Wm. H. Bertolet, Jr., C. C. Hagelgans, A. H. Gaede, E. W. Seasongood.

Leatex Chemical Co., Philadelphia. Booth 43. Chemical specialties for wet-processing of textile fibers and fabrics; including boil-off oils, kier oils, dyeing oils, penetrators, and finishes. Rep.: J. M. McChesney, J. F. Rieder, R. R. Willgoos, M. M. Guertin, H. Higginbotham, C. L. Hammell, Louis Soistmann.

Percy A. Legge, Philadelphia. Booth 218. Woolen, worsted, mohair, merino, cashmere and angora blend, Controlastic yarns. Featuring French-spun white and colors for hosiery and underwear; Rambeau yarns. Rep.: C. W. Neeld, Oliver McCurdy, Wm. Gilbert.

Leighton Machine Co., Manchester, N. H. Booth 383. Knitting machines. Rep.: Alfred B. Gould, Frank C. Golden.

Locke Cotton Mills Co., Concord, N. C. Booth 394. Cotton yarns. Rep.: Carl Miller, Sr., Carl Miller, Jr., Fred Smyre, Sr., Fred Smyre, Jr., H. T. Cosby, Geo. Thomas, W. L. Steele.

Macbeth Daylighting Co., Inc., New York. Booth 168. Daylight color identification, color grading, color examining lamps; featuring newly designed box lamps with Corning Daylite filters, and special diffusing glass to give overcast north-sky daylight effect. Rep.: Norman Macbeth, B. J. King, K. C. Barrett, P. H. Lawson, F. F. Phillips.

Wm. A. P. MacKnight, Philadelphia. Booth 353. Carded and combed cotton yarns. Rep.: Wm. A. P. MacKnight, F. Etherington, B. Etherington, Jr., C. J. Swift, H. W. Swift, A. E. Davis.

Malina Co., Inc., New York Booths 384, 385. Natural and converted rayon yarns. Rep.: L. Malina, Irving Aibel, J. J. Richrath.

Markem Machine Co., Keene, N. H. Booths 311, 318. New Model 125M label printer for cone stickers, ribbon labels, and size ticket production; tag marking machine for printing of variable information on coupon tags; Model KD7 label and box printer used for printing in style numbers, sizes, color names, quantity designations; Model 105 heavy-duty box and label printer; Markem Presto power printer; Presto hand-operated label printer for printing on labels and boxes. Rep.: C. A. Putnam, C. E. Putnam, O. B. Meyers, H. D. Milton.

C. R. McGinnes, Reading, Pa. Booth 356. Carded and combed cotton yarns, merino and worsted yarns, spun silk and wool yarns, mercerized yarns, silk throwing. Rep.: C. R. McGinnes, T. L. Wilson, Ernest Jones.

Merkel Bobbin Co., Allentown, Pa. Booth 175. Bobbins with Bakelite, fiber, aluminum, and stainless-steel heads. Featuring Merkel combination Bakelite head steaming 5B bobbins and take-up bobbins. Rep.: W. Everitt Kiefer, George McGee.

Merrow Machine Co., Hartford, Conn. Booths 377, 378, 403. Trimming and overseaming, overedging, plain crochet, and shell-stitch machines; new Class A models for overseaming and overedging operations on knit goods.

Clarence L. Meyers & Co., Philadelphia. Booths 340, 341, 368, 369. Durene, combed, carded, wool and silk, wool and cotton, wool and rayon, and cotton and rayon yarns. New patented full-fashioned hosiery top with super stretch. Rep.: C. L. Meyers, M. M. Meyers, G. C. Ballenberg, M. Meyers, G. E. Maurer, C. E. Bender, D. Strauss, H. W. Schrader, E. W. Fowler, Louis Eschelbach, H. J. Riebe.

James E. Mitchell Co., Philadelphia. Booth 363. Cotton yarns, natural and dyed; novelty yarns. Rep.: J. J. Mitchell, Jr., Robert H. Smith, Arthur Gagner, J. J. Mitchell, 3rd, A. W. Morton, Jr., F. S. Stover, E. L. Merritt, Jr., Ralph Whitaker, and B. G. Murray.

Modern Throwing Co., Bethlehem, Pa. Booths 4, 5. Commission throwing; silk hosiery yarns. Rep.: Albert J. Pfeiffer, Reginald Mease.

L. P. Muller & Co., Philadelphia. Booths 176, 177. Natural and colored cotton yarns and underwear made therefrom. Rep.: J. H. Nicholson, J. T. Miller, H. R. Pennington, H. G. Harper, H. D. Muller, J. P. Cummings, A. M. Shaw, J. L. Muller.

Narrow Fabric Co., Reading, Pa. Booths 275, 276, 293, 294. Elastics and lace elastics for underwear and hosiery, featuring La-ce-lastic. Rep.: S. R. Fry, J. W. Sweeney, I. N. Stiteler, F. H. Klein, G. Dudley, Jean L. Welch.

Nashua Electric-Magnetic Stop Co., Nashua, N. H. Booth 91. New electric stop motion for spring needle machines. Rep.: Robert M. Williams.

National Vulcanized Fibre Co., Wilmington, Del. Booth 163. Vulcanized fiber in form of sheets, rods, tubes, and special shapes for spools, shuttles, roving cans, trucks, etc.; Phenolite rolls. Rep.: T. B. Baldridge, J. G. Beasten, H. C. Hackett, J. S. Tatnall, J. K. Johnston.

North American Rayon Corp., New York, N. Y. Booths 199–200. Rayon yarns and fabrics made therefrom. Rep.: E. E. Steidler.

Onyx Oil & Chemical Co., Jersey City, N. J. Booth 217. Finishing compounds. Featuring Mapro Degum, for one-bath hosiery boil-off and dyeing; Fiba-Perm hosiery finish for increased strength and elasticity; Silk-O-Ray to produce "silky" feel on rayon underwear; Onyxsan softener for synthetic fabrics. Rep.: A. C. Mackey, C. D. Ehrengart, L. P. Brick, J. Trezise, E. W. Klumph, A. R. Jenny.

Pairpoint Corp., New Bedford, Mass. Booth 167. Textile paper carriers. Rep.: Warren G. Pierce, C. N. Ricketson.

Paramount Textile Machinery Co., Chicago, Ill. Booths 266, 267, 283–286. Dual-heat hosiery drying machines, forms and tables, inspection machines, looper attachments; featuring new Paramount "Paraflex" form, which converts to any shape by application of specially designed attachments. Rep.: Henry Pope, L. H. Oswald, T. W. Prosser, L. S. Kleinfeld, W. L. Coggins, O. A. Siegel, J. J. Biselx, T. K. Long, W. H. Albertson.

Park Avenue Studios, New York, N. Y. Booth 86. Hand-colored photographic display cards and enlargements for hosiery, underwear, and other knit goods manufacturers. Rep.: S. M. Rosenstein.

Permutit Co., New York. Booth 355. Water conditioning equipment; CO_2 indicator and recorder. Rep.: M. F. Corin, D. J. Hess, N. Sharp, W. L. Lowrie, E. O. House.

Geo. B. Pfingst, Inc., Philadelphia. Booth 339. Silk yarns. Featuring high twist, compensated twist, and crepe twist. Rep.: G. B. Pfingst, Bart Pfingst, J. J. Jacobs, J. P. Reynolds.

Philadelphia Drying Machinery Co., Philadelphia, Pa. Booth 209. Drying machinery for raw stock, yarns, packages, and piece goods; also latest tenter dryers, carbonizing equipment, twist-setting machines, and vacuum extractors. Rep.: W. W. Sibson, B. M. Jones, H. O. Kaufmann.

Philadelphia Metal Drying Form Co., Philadelphia, Pa. Booth 105-AA. New hosiery boarding machine, Multishape forms, tissue inserters, and envelope fillers. Rep.: Paul Guggenheim, Joseph Seligman, John Fox.

Pickett Cotton Mills, Inc., High Point, N. C. Booth 41. Carded and combed yarn. Rep.: R. H. Walker, Boshamer & Co.

Max Pollack & Co., New York. Booth 8. Sewing threads. Featuring Coupray sewing thread, a rayon product. Rep.: Joseph Pollack, A. W. MacBride, C. L. Darlington, J. D. Corbett, T. W. Mills, J. S. Johnson.

Proctor & Schwartz, Inc., Philadelphia. Booths 266, 269, 277, 278, 291, 292. Boarding machines. Featuring two types of machines, one for women's stockings, and one for men's half-hose. Featuring also automatic device giving special finish to hosiery after leaving boarders. Rep.: Maj. C. T. Griffith, C. S. Tiers, H. B. Lex, W. J. Merrigan.

Quaker Chemical Products Corp., Conshohocken, Pa. Booth 418. Textile chemicals, including boil-off, needle, and stainless oils; delustrants; detergents; softeners; penetrants; kier assistants; weighters; and silk oils. Rep.: E. Niessen, J. H. Young, Dr. Adolf Krueger, H. N. Kopple.

Queens Machine Corp., Brooklyn, N. Y. Booths 110–113. Double-lock flat boarder machine; circular string or border machine; Queens 88-in. 9-gage full-automatic links machine equipped with 9-needle selective automatic rack and new single-needle action giving wide range of new design possibilities. Rep.: M. Zimic, Miss Mary Zimic.

Rayon Textile Monthly, New York. Booths 87, 88. Textile publishers.

Reece Button Hole Machine Co., Boston, Mass. Booths 381, 382. Buttonhole machines. Rep.: J. H. Pikul, F. O. Paul, F. A. Reece, Jr.

Robert Reiner, Inc., Weehawken, N. J. Booths 410–412, 443–445. Hosiery and other textile machines. Featuring new Einsiedel-Reiner "COMBI" machine which produces single-unit stockings by new method giving continuous, uninterrupted knitting of leg and foot on one machine; insertion of lower heel on separate machine by automatically connecting heel with sole; also gives possibility of using conventional leggers with E-R heeler to produce a single-unit stocking. Also featuring three new types of S&R improved warp-knitting machines and improved high-speed tricot machine. Rep.: Dr. Robert Reiner, Fritz Lambach, P. A. Sullivan, Ferdinand Loeffler, August Schoenenberg.

Chas. Reitzes, Philadelphia. Booth 53. Model 6 Saxmayer tyer equipped with attachment permitting use of tape or string without adjustment; Model 9 DFA Saxmayer machine for automatically tying bundles, boxes, and packages. Rep.: Chas. Reitzes, H. L. Reitzes, Thomas Walker.

Republic Steel Corp., Cleveland, Ohio. Booths 46–49. Enduro stainless steel articles, including experimental bleaching kier, expander arrangement, tenter-frame clip, roller bearings, miniature jig tub, miniature dry can and liner, dry jig, humidifying unit, utensils, pails, dippers, and other fabricated articles. Rep.: C. C. Snyder, G. W. Hinkle, L. L. Caskey, E. S. Dehn, E. C. Anderson, J. K. Bole, W. H. Oliver, H. N. Evans, A. W. Minuse, C. B. Pharo, Jr.

Robaczynski Machine Corp., Brooklyn, N. Y. Booths 154, 155, 190, 191. High-speed circular tubing machine with stop motion, motor attached; flat type double-head border machine with stop motion and motor attached; advanced double jacquard individual needle control links-and-links machine with stop motion, motor attached. Rep.: L. Robaczynski, W. F. Cohen, Edward Masin.

Rochester Engineering & Centrifugal Corp., Rochester, N. Y. Booths 250, 251. Two sizes of dyeing machines, constructed with Monel metal tub and cylinder; also two types of extractors with Monel metal construction. Featuring cylinders of dyeing machines of spot-welded construction with silk finish interior by hand honing process; control provides coasting period between reversals. Rep.: R. C. Caine, P. B. Compton, C. F. Fischer.

Rose Mills, Inc., Philadelphia. Booths 194, 195. Novelty yarns. Rep.: Harry G. Schnitzler, A. G. Adams, Julius Green, Edward Stotter.

Royersford Needle Works, Inc., Royersford, Pa. Booths 399, 400. Springbeard needles, sinkers, dividers, knock-over bits, jacks, etc. Rep.: Ferdinand F. Heller, Fred Heller, R. W. Breidenbach, Chas. Bortz, Robert Baker.

Russell Mfg. Co., Middletown, Conn. Booth 338. Woven elastic webbings for use on underwear, knee-length hosiery, and men's half-hose. Featuring Lastex fabric. Rep.: D. H. Byerly, R. B. Titterton, W. J. Ransom, E. Schneider, W. S. Hadley, Donald Fisher.

San-Knit-ary Textile Mills, Philadelphia. Booth 44. Nets for dyeing hosiery and for silk throwsters. Featuring light-weight, long-wearing nets for dyeing fine-gage hosiery. Rep.: J. E. Casper.

Sauquoit Silk Mfg. Co., New York. Booth 436. Silk yarns for hosiery. Rep.: A. Gavaghan, Thomas Cowan.

Scholler Bros., Inc., Philadelphia. Booths 252, 253. Soaps, softeners, sulphonated oils, finishing compounds; featuring "Durabond Combination Finishes" for silk and rayon knit goods. Rep.: F. C. Scholler, J. F. Noble, E. S. Atkinson, Harold Miller, L. M. Boyd, William Jackson, W. A. Daniel.

Harry Schwartz, New York. Booth 42. Novelty yarns.

Scott & Williams, Inc., New York. Booths 130–141. Knitting machinery. Half-hose machines including Scott & Williams Komet machines; Bentley Komet machines; Standard Trump 80-W shog machine, with multiple needle wrap attachment; 36-wrap ES machine with color-in-color and new chain striping attachments; automatic top-wrap machine HH-PW in various gages and also equipped with new chain striper; HH 25-step spiral and HH-NRP machines. For women's hosiery the 25-step K spiral gusset toe machine in fine gages equipped with striping, elastic welt, and gusset square-heel attachments. For children's socks, half-socks, and anklets, a 70-gage Standard Trump Model H machine. For underwear and other special fabrics, the Scott & Williams automatic double-butt tuck and float machine.

Sees & Faber Co., Inc., Philadelphia, Pa. Booths 18, 19. Hosiery knitting and manufacturing supplies. Rep.: Jos. Dietrick, A. Beetle, F. Buckley.

Shell Union Oil Corp., Philadelphia, Pa. Booths 67, 68. Complete line of Shell petroleum products utilized by the textile industry. Rep.: F. C. Rule.

Singer Sewing Machine Co., New York, N. Y. Booths 226–229, 262–265. Sewing machines mounted on tables and driven by Singer electric transmitters.

Smith, Drum & Co., Philadelphia. Pa. Booths 25–36. Hosiery, skein, package, and piece goods dyeing equipment; also auxiliary equipment. Rep.: H. S. Drum, W. C. Dodson, J. E. MacDougall, J. M. Ballentine, P. M. Parrott.

A. M. Smyre Mfg. Co., Gastonia, N. C. Booth 395. Cotton yarns. Rep.: H. T. Cosby, W. George Thomas.

Sonoco Products Co., Hartsville, S. C. Booths 96–99. Featuring "House of Cones" containing display of complete line of textile paper carriers. Rep.: C. H. Campbell, W. B. Broadbent, J. W. Hilsgrove, W. A. Biggs, E. J. Cotter, H. P. Lamarche, J. A. Durkin.

Southern Knitter, Charlotte, N. C. Booth 77. Textile publishers.

Southern Textile Machinery Co., Inc., Paducah, Ky. Booths 374, 375, 406, 407. Standard dial and cylinder loopers and looper-room accessories. Rep.: J. T. Balthasar, R. N. Parkin, Chas. Holcomb.

E. O. Spindler, New York. Booth 201. Showing fabrics made on Saupe high-speed tricot machines with and without cut press attachment; double tricot machines and other Milanese, elastic, and crocheted fabrics. Rep.: E. O. Spindler, G. Bellini.

Spool Cotton Co., New York. Booths 446, 447. Threads for all types of sewing machines used in the knitting industry; featuring the Crown Smooth-sliding fastener for garments and accessories. Rep.: W. S. Kennedy, E. A. Smith, Jr., M. G. Davies, W. M. Hilton, J. J. Pickel.

Stafford & Holt, Inc., Little Falls, N. Y. Booths 441, 442. Circular latch-needle knitting machines; featuring 30-in., 12-feed, 7-cut rotary jacquard machine to knit finished welt, plain border, and body in designs; also 7-in., 2-feed rib toque machine to stripe four colors at random and knit plain and half cardigan. Rep.: J. A. Stafford, John H. Warner, Ralph Lamb, Fred Seipple.

Standard-Coosa-Thatcher Co., Chattanooga, Tenn. Booths 197, 198, 219, 220. Samples of Durene yarn, Saks, Preemo; combed peeler yarn, threads, Selo. Rep.: J. S. Verlenden, R. J. Mathewson, W. H. Thatcher, W. S. Lawson, J. P. Rickman, M. A. Henderson, Charles F. Smith, C. D. Harris, R. B. Lewis, W. M. Hall, E. R. Dillmore.

Standard Oil Co. of Pennsylvania, Philadelphia, Pa. Booths 60, 61. Petroleum products applicable to the textile industry. Rep.: C. N. Watson, J. A. Klopp, S. Ebling, M. W. Collins, Jr., J. M. McNamara, M. E. Richman.

Standard Trump Bros. Machine Co., Inc. Booths 130–141. See **Scott & Williams, Inc.**

Stop Motion Devices Corp., Brooklyn, N. Y. Booths 202, 203. New-type needle protector and new stop mechanism; Wesco electric stop motions for knitting machines. Rep.: E. Vossen, T. Tellerman, Alfred Malluck, A. Wachsman.

Supreme Knitting Machine Co., Brooklyn, N. Y. Booths 427–430. Jersey circular knitting machines. Rep.: Sam Mishcon, Lester Mishcon, B. R. Ebersman, Harry Agulnek.

Textile Age, New York. Booths 84, 85. Textile publishers.

Textile Machine Works, Reading, Pa. Booths 300–304, 325–329. Knitting machines and accessories. Rep.: N. E. Richards, Louis Thun, R. N. Apprich, E. A. Shoemaker, R. W. Weaver, Paul Kroener, Henry Printz.

Textiles, Inc., Gastonia, N. C. Booths 236, 237. Cotton yarns. Rep.: A. W. Latta, P. J. Thompson, W. T. Rankin, Jr., S. G. Haigh, J. T. Craig, L. F. Warren, G. T. Hutchinson, A. A. Dinsmore, Jr., H. G. Dolliver, J. A. Whelan, A. W. Latta, Jr., G. S. Johnston, H. D. Skinner.

Textile World, New York. Booths 114–117. Textile publishers.

Tompkins Bros. Co., Syracuse, N. Y. Booths 404, 405. Circular spring- and latch-needle knitting machinery. Rep.: W. A. Ingalls, George L. Logan.

Torrington Co., Torrington, Conn. Booths 313–316. Knitting machine needles, both latch and spring beard; sewing machine needles, ball bearings, sinkers, dividers for full-fashioned hosiery machines.

Tubize Chatillon Corp., New York, N. Y. Booths 408, 409. Variety of rayon knit fabrics made in own knitting mill and in mills of yarn customers. Rep.: E. H. Bogardus, E. Dudley Bryan, H. Gold, F. R. Scull, N. B. Richardson, M. M. Wise, L. F. Smith.

E. W. Twitchell, Inc., Philadelphia. Booth 169. Hosiery and knit goods packaging material. Feature embossed, plain, and colored glassine for folders, wraps, and fly leaves; hosiery inserts; bags and envelopes, etc. Rep.: N. T. Gates, W. Middleton.

Underwear & Hosiery Review, New York. Booth 1AA. Textile publishers.

Union Special Machine Co., Chicago, Ill. Booths 305, 306, 323, 324, 330, 331, 348, 349, 360, 361, 386, 387. Industrial sewing machines. Latest types of hosiery seaming machines and complete line of machines for manufacture of knit garments; also equipment for general garment manufacture. Rep.: P. T. McLendon, W. E. LeRoy, Wm. Bleicher, A. S. Riviere, Wm. Denholm, L. Perrin, C. E. Stevens, G. A. Rundle, S. J. Storey, A. J. Feigel, J. M. Keasler, Wm. Pfeiffer, P. J. Steeper, C. S. Thompson, T. S. Whitsel, T. N. Murphey, H. A. McGwier, J. A. Zimmer, W. L. Johnson.

United Elastic Corp., Easthampton, Mass. Booths 235, 256. Elastic web for underwear, hosiery, and bathing suits. Introducing Pluralastic, a new type of covered rubber, and naked rubber. Rep.: W. E. Dalby, R. A. Waite, R. A. Bishop, D. L. Hurlbut, G. S. Van Voorhis, H. O. Hollingworth, E. R. Boehm, H. J. Lederer, W. H. Smith, Joe Smith.

U. S. Ring Traveler Co., Providence, R. I. Booth 208. Various styles and sizes of ring travelers; featuring twisting frame in operation showing travelers under working conditions. Rep.: M. L. Bolton, H. J. Smith, A. M. Bowen.

United States Testing Co., Hoboken, N. J. Booth 398. Testing equipment. Featuring raw silk and rayon quality control test based on Flexease test; new silk and rayon soaking and preparation service; new throwster tints line developed in conjunction with recommended soaking formula. Rep.: A. L. Brassell, S. B. Walker, G. R. Turner, H. M. Block.

U. S. Textile Machine Co., Scranton, Pa. Booths 312, 317. Silk and rayon throwing equipment. Rep.: A. W. Thomas, P. J. Thomas, George M. Wescott, John Tattersall.

Universal Winding Co., Providence, R. I. Booths 148–153. Winding machinery for handling cotton, silk, and rayon yarns and various packages. Featuring improved No. 50 precision winder equipped with latest attachments for silk and rayon; also Roto-Coner winding cotton yarns, etc. Rep.: C. H. Brown, Robert Leeson, E. O. Smith, T. L. Cotter, F. S. Treat, R. L. Chisholm, E. R. Swanson, W. S. Warren, A. I. Harvey, E. S. Broadbent, W. J. Quinn, R. M. Mauldin, I. E. Wynne, J. W. Stribling.

Van Straaten & Havey, Inc., Philadelphia. Booth 431. Silk knitting yarns. Rep.: C. F. Havey, C. L. Havey, T. W. Wilson, Murdock Smith, Joseph Kester, R. D. McDonald.

Venango Engineering Co., Philadelphia, Pa. Booths 254, 255. Stainless steel rotary type hosiery dyeing machines, both conventional and new floating rotary type. Rep.: Messrs. Dunbar, Jantaen, H. G. Doak, M. Speizman, A. Robertson.

Victor Ring Traveler Co., Providence, R. I. Booth 178. Ring travelers. Rep.: E. R. Jerome, J. A. Hull, B. H. Waterman.

Wachsman Sons, Inc., Brooklyn, N. Y. Booth 78. Electric stop-motions, flat and circular knitting machines. Featuring new easy-threading porcelain. Rep.: Ben Wachsman, Michael Wachsman.

S. Walter, Inc., Philadelphia. Booth 83. Paper specialties for hosiery, including inserts, dividers and tissue leg inserts. Rep.: E. S. Rains.

Waterman, Currier & Co., Inc., Boston, Mass. Booths 392, 393. Natural and dyed, carded and combed cotton yarns; also mohair, worsted, and worsted-spun rayon yarns. Rep.: H. A. Currier, S. S. Fulton, R. E. Banks, R. C. Stidston, T. C. Graham, and A. B. Littlefield.

Whiting Patterson Co., Inc., Philadelphia. Booth 210. Cellulose hosiery envelopes, plain and printed; wraps; rolls; also fancy papers and general hosiery and underwear packings. Rep.: W. P. Nickerson.

William Whitman Co., Inc., New York, N. Y. Booths 242, 243. Worsted, merino, and worsted-spun blend yarn; carded and combed cotton yarns, natural and mercerized; spun rayon, spun acetate, and blended yarns. Rep.: M. G. Decatur, J. J. Devlin, W. A. Fuller, H. S. Hicks, M. H. Horchler, H. C. Leswing, K. N. Merrill, J. K. Robinson, J. L. Stickley, W. C. Strugnell, J. E. Varney, R. J. Walsh, W. C. Ballard, E. C. Hay, P. L. Lamb, and C. C. Dawson.

Wildman Mfg. Co., Norristown, Pa. Booths 118–123. Circular machinery for production of underwear, girdles, and bathing suits; also single-section, single-unit full-fashioned hosiery machines and half-hose machines. Rep.: K. Howie, F. E. Paul, J. J. Brennan.

Willcox & Gibbs Sewing Machine Co., New York. Booths 334–347, 372, 373, Industrial sewing machines. Featuring two new machines in operation, Metropolitan Style 950-W for attaching elastic tops or belts to athletic shorts, cotton, rayon, silk, wool undergarments; and Metropolitan Style 950-CDD2 for attaching split tubing to athletic shorts, lingerie, and undergarments. Also featuring fastlock machine and flatlock Type 351. Rep.: G. M .Lewis, A. E. Selby, Norman Wonnacott.

Wolf Bros., Philadelphia. Booth 45A, Paper, cellophane, and specialty hosiery bags. Rep.: W. P. Brockermann, Jr., P. Reynolds Brockermann, G. Bauer, J. A. Hedges, Meyer Gropper, Harry Gropper, Frank Preeilio, W. L. Wolf.

Thos. Wolstenholme Sons & Co., Inc., Philadelphia. Booths 350, 351. Worsted yarns. Rep.: L. F. Schaeffer, F. S. Krecker, G. C. Zimmerman, L. F. Schaeffer, Jr.

KNITTERS AGGRESSIVE

1938-1939 association programs call for decisive action on vital problems

***A QUESTION—AND THREE ANSWERS:** Knitting Week is an appropriate time in which to take stock in the knitting industry. And, in taking stock, one of the most important questions to answer is: What are the trade associations in the industry planning to do?*

This series of three articles presents the answers to that question for the three major divisions: hosiery, underwear and outerwear. It will be noted that the virility and progressiveness which have characterized cooperative effort in the knitting industry in the past can be counted upon in the solution of the many pressing problems ahead. That type of leadership is a major asset.—Editor.

Coordinated Action Keynote of Hosiery Industry's Program

ONE of the major problems of the hosiery industry for the last decade has been the "profitless prosperity" status of a considerable number of its members. In the face of improved methods of manufacture, enlightened management policy, a more cooperative spirit, and a materially stronger associational position, certain manufacturers continue to find themselves in the red. The difficulties facing these firms appear all the more striking when contrasted with the rest of the industry, notably the southern full-fashioned manufacturers and the northern brand-line manufacturers, practically all of whom are operating profitably. Likewise the position of the unprofitable mills contrasts with the industry's steady progress as reflected in statistics; for instance, total shipments have risen from 103,500,000 doz.pr. in 1934 to 126,000,000 doz.pr. in 1937.

Broadly the weakness appears to be due to overcapacity in both seamless and full-fashioned hosiery—a condition tracing back to the full-fashioned hosiery boom of some fifteen years ago—and in the case of those making men's half-hose to displacement of the transfer type of machine by the automatic machine.

The difficulties facing these mills are viewed by the National Association of Hosiery Manufacturers as part of a broad picture, all phases of which should be studied concurrently in any plan of action. The association holds that the unprofitable firms can be brought back to revenue-yielding status "not through any one performance or policy" but rather through solid action on a broad front which encompasses all related phases. To quote Earl Constantine, managing director of the National Association, "Let us build the industry solidly, as a brick wall is built, one brick at a time, well placed."

The picture that evolves today is one of an industry strengthening its position by carefully coordinated steps, or, to borrow Mr. Constantine's descriptive phrase, by erecting a new industrial structure, "brick by brick."

Four "bricks" are outstanding at present in this reconstruction job, and they merit study as representing a major part of the association's 1938 contribution to the industry's progress: (1) Cooperation—expansion of the industry-wide meetings which have proved increasingly successful since inaugurated two years ago; (2) Facts—enlargement of the present statistical service to include data on unfilled orders, thus affording a barometer of sales trends for the immediate future; (3) Costs—a six months' series of letters, giving manufacturers practical and concise information on prime essentials of sound costing; (4) Fiber identification—development in cooperation with the Federal Trade Commission, of hosiery marking rules which are expected to solve the vexing problem of hosiery content identification; these rules are being pushed for early promulgation.

As the above indicates, coordination of the various sub-divisions of activity is a notable phase of the industry's 1938 program. Indeed, coordination in its broad sense might be accepted as a major aspect of the hosiery industry today. During recent years, these manufacturers have made conspicuous progress toward unification of their groups which in turn has helped the leaders in planning for the industry as a whole.

There is a growing belief among hosiery manufacturers that the key to their salvation lies in centralized action; this type of approach proved helpful in the difficult years of NRA and increasingly so since. Recognizing their mutuality of interest, they are leaning away from the disruptive factionalism of other years.

All of which builds up to a promising outlook. The test, of course, will come in financial reports in years immediately ahead. Can the industry's present program make for profits for all well-managed mills? Hosiery leaders are convinced that it can—provided the program gets adequate support. Since success of the association's plans means individual success of each company it would seem that enlightened self-interest would prompt the manufacturers to give the program the one thing needful to its victory, namely—their unstinting and unflinching support.

(*Symposium continued on next page*)

Earl Constantine, managing director of the National Association of Hosiery Manufacturers, was born in 1885 in Bulgaria, the son of American missionaries. After preparatory training at Constantinople, he was graduated from the University of Minnesota in 1906. During the subsequent quarter-century he held executive posts in various leading organizations, joining the National Association of Hosiery Manufacturers as managing director in 1932. Probably Mr. Constantine's outstanding contribution, has been in unifying the industry, effected through industry-wide meetings and other ways, much to the benefit of the hosiery industry as a whole.

Roy A. Cheney, managing director of The Underwear Institute, next year will round out 20 years service to the underwear industry. Born in Syracuse, N. Y. in 1888, Mr. Cheney was graduated from Yale University Law School in 1910. He served two years with the A. E. F. in France, participating in 3 battles. Mr. Cheney became affiliated with the Institute's predecessor, the Associated Knit Underwear Manufacturers of America in 1919 as secretary, later rising to the post of managing director. His work in curbing trade abuses and in strengthening market morale might be cited as among his most important accomplishments.

"Labor Inventory" Method Averts Underwear Strikes

FIVE years ago an open shop industry, today 25% organized—that transition indicates the important change which now makes labor relations a real problem for the underwear industry. This industry traditionally has been one in which labor has been well satisfied; trade leaders believe, therefore, that labor problems have been stimulated by recent national trends rather than by conditions within the underwear industry itself. In other words, the manufacturers contend, unionization has been promoted not so much to change wage and hour conditions as simply to gain recognition. This lack of better objective, incidentally, may explain what seems to be a bitter inter-union battle developing between C.I.O. and A. F. of L. for labor control.

Regardless of its artificiality, the labor relations problem has consistently been viewed by the underwear industry as one demanding intelligent attention and aggressive action. Today this industry is following a vigorous program both to attain the immediate end of averting strikes, and more broadly to seek out and permanently eradicate the weak spots and danger zones in its labor policy, according to Roy A. Cheney, managing director of the Underwear Institute, national body for the industry.

A study of the industry's history shows that only a negligible number of mills have attempted to exploit labor to cut costs and undersell competitors, in disregard of the industry's generally fair labor policy. As a matter of fact, corrective action on labor abuses, to prevent or settle strikes, has been a policy of the Underwear Institute for several years. This policy is carried out through the organization's Industrial Relations Counsellor, John D. Strain, who serves as arbitrator between organized labor and the mills in all problems.

Thanks to the groundwork laid by its Industrial Relations Counsellor and the fact that he is trusted alike by manufacturers and workers, the industry believes that it has good prospects of successfully meeting any labor issues that might lie immediately ahead. Broadly, the problem calls for a 2-ply program covering (1) the mills' relation to the C.I.O.-A.F.L. feud, which conflict is becoming increasingly acute, and (2) a permanent labor policy to guide mills in dealing with their own workers.

To meet these needs the Underwear Institute has promulgated a definite program; it recommends two steps by the manufacturers, first, that they maintain strict neutrality in the conflict between the unions, and, second, that they take a "labor inventory" of their mills, with a view to locating and correcting any improper conditions that might eventually be used as union propaganda. Explaining the "inventory" idea, industry leaders assert that such checkups of working conditions are just as necessary as the annual stock inventory; they add that the "inventory" has already proved its usefulness by preventing strikes. Mills are asked, first to make the check-up of conditions; second, to send for Mr. Strain if there is even a faint suspicion that dissatisfaction exists.

Second to labor relations in the underwear industry's 1938 agenda, comes the fiber identification issue. Since underwear fabrics frequently combine three, sometimes even four fibers, the matter of describing content is extremely complex. After months of study of the various fiber codes, promulgated and proposed, the Institute has decided that the only real solution lies in the enactment of a separate set of rules to meet the particular needs of the industry. Accordingly plans are being developed with the Federal Trade Commission to promulgate a special underwear code which, it is hoped, will be placed in effect by the early summer.

These two problems, labor and fiber identification, do not span the whole horizon, for the underwear industry. But they are undeniably the dominant issues. And there is reason to hope for successful culmination of the program in both fields. With respect to labor, the industry leaders are especially confident. After all, they reason, if conditions in a mill contain the spark that can ignite a strike, why tolerate them? And, following this line of thought, the leaders believe that the "inventory" idea may pave the way for sounder labor relations which, in the end, of course, mean sounder business.

Executive Officer of the Three Major Knitting Associations

Harold R. Lhowe, executive director and counsel of the association, has been chief counsel to the outerwear industry and a leader in its activity since he helped form the original association in 1912. Mr. Lhowe is a graduate of New York Law School; he was admitted to the bar in 1909 and during the 29 years following he has combined an active legal practice in the field of competitive relations with leading participation in outerwear affairs, serving as industrial spokesman in all major activities, and exercising careful watch on tariff, legislative and other problems.

Outerwear Men War on Contract System Problem

WHAT is outerwear's chief problem? To put that question to any member of the knitting industry's most heterogeneous division today is somewhat like reaching into a grab-bag. There's no telling what you'll get for an answer. The tariff, one manufacturer might reply: competition of woven fabrics—another; while a third no doubt would talk of labor difficulties.

All these, of course, are important issues in their own spheres, but of limited significance. When the industry is viewed broadly, one issue arises which is so acute and far-reaching that it shoves all other outerwear issues into subordinate place. That is, the problem of instability of production created by the contract system of production. Harold R. Lhowe, executive director and counsel of the National Knitted Outerwear Association, has well termed this problem "insidious." Actually it is eating like a cancer into the heart of the outerwear industry.

Briefly here's the tale: As a result of a period of lean years for the industry as a whole, there has developed in certain areas, especially in New York, where about half the units of the industry are located, a serious condition of under-capitalization which brought into being a new type of outerwear jobber. This jobber has beaten down production costs and prices to a point where the existence of the entire outerwear industry is endangered. This type of trader has no machinery. He buys yarn, commissions it out to impoverished mill-owners to convert into garments and more or less sets his own price for the manufacturing service. Then he sells the product.

The evil is particularly pronounced in the field of staple merchandise since that division is the most vulnerable. However, even the mills in the style lines who make finished merchandise and sell direct to retailers, and who rely on individuality of styling, not on low production cost, to hold up their prices, are beginning to feel the pressure of the competition.

Asked regarding the evil, Mr. Lhowe said it was the most crucial that the association faced this year; he emphasized also, however, that numerous other important problems, including tariff, style trends, etc., were in the association's "must" file for 1938. Mr. Lhowe outlined the association's views on the contract system problem, and the plans formed to meet this difficulty.

As the association sees it, there are four basic needs in the picture: (a) standardize labor conditions at decent levels of hours and wages; (b) develop better capitalization among small mills so that these units can't be forced by unscrupulous jobbers to manufacture for them at below-cost prices; (c) discourage small mills which have practically no capital and which are the worst offenders in degrading the market; (d) develop self-regulation of the industry by means of a code covering both production and distribution, if means may be devised by which the non-complying minority can be brought into line.

Mr. Lhowe views the last-mentioned as by far the most important. Machinery to lay the groundwork for concerted action by the industry along that line already has been set in motion. At its annual convention in New York last month, the National Association, through Mr. Lhowe, called a meeting of a council which has been formed especially to act in this emergency. This council comprises representatives of all outerwear branches, all districts of the country, and also representatives of the allied industries. The new body will analyze the problem from every major aspect and draft a platform of action for the industry.

The council is under no illusions as to the magnitude of its task. The contract system of production has affected every large unit of the industry, no matter where located, which manufactures for the jobbing trade. Costs and prices are being slashed so ruthlessly that even the most stable jobbers can't tell how long they may continue to make profits; it is hoped therefore that their realization of the situation may make them amenable to any decisive action which offers them a chance to survive and operate profitably.

But—with such support or without it—the outerwear industry is determined to put its house in order on this most critical question of "family shop" knitting at sweatshop levels. That is the big aim of 1938—and it is a man-sized job.

Knit Goods Week Calendar

Monday, April 25. Knitting Arts Exhibition opens 1 p.m., at Commercial Museum, Philadelphia.

Tuesday, April 26. Knitting Arts Exhibition, 10 a.m., to 10 p.m.; Annual meeting, National Association of Hosiery Manufacturers, Commercial Museum, 2 p.m.

Wednesday, April 27. Knitting Arts Exhibition, 10 a.m. to 10 p.m.; Hosiery industry conference, Federal Trade Commission, on proposed hosiery content marking rules, Commercial Museum, 10 a.m.

Thursday, April 28. Knitting Arts Exhibition, 10 a.m. to 10 p.m.; Annual meeting, Underwear Institute, Commercial Museum, at 9:30 a.m. Rep. Robert Ramsbeck of Ga., guest speaker at luncheon.

Friday, April 29, Knitting Arts Exhibition 10 a.m. to 5 p.m.

SEEKING NEW MARKETS

Knitters supplement fabrics for apparel with products for household and industrial use

IN the first quarter of this century the knit goods industry showed a vigorous growth, the value of products produced annually increasing from about $100,000,000 in 1900 to over $800,000,000 in 1925. Although production of full-fashioned hosiery continued to gain during the next ten years, and the vogue for knitted dresses aided the outerwear division, in 1935 total value of products had dropped to $600,000,000.

But leaders in the knitting industry and in the knitting machinery field had begun to realize that the development of new products offered an opportunity to increase the sales of knit goods far beyond any previous peak. The actual development work has hardly started. Yet already many new products are beginning to appear on the market and others are in the experimental stage. At the same time there is a growing consciousness of the need for some type of concrete action further to stimulate the development of and consumer interest in new knitted products.

One man envisions knitted rayon as the future clothing of the human race. Another sees vast unexplored markets for knit goods for household and industrial use. The knitting industry is so diversified that few people —even those intimately connected with it—are familiar with developments that occur in all the various branches. It appears worthwhile, therefore, to describe briefly some of the new products which have been brought out in recent years and to indicate the lines along which further progress appears most probable.

Wearing Apparel

From the beginning, the knitting industry concentrated almost entirely on the manufacture of products for use as wearing apparel, the most important items being hosiery, underwear, sweaters, bathing suits, and gloves. It was natural, therefore, that in searching for larger markets the knitters looked first to the apparel field. As a result, most of the new products which have been brought out thus far have been for apparel.

Starting some eight or ten years ago with the introduction of knitted dresses and suits for women, the outerwear division has been fairly well up on its toes as regards new product development. Knitted topcoatings and overcoatings have been greatly improved in recent years and have become increasingly popular. Knitted suitings for men have been produced which have some remarkably good characteristics, although a large amount of experimentation is still necessary before a really salable fabric can be offered.

The growing vogue for outdoor sports offers a wonderful opportunity to the knitting industry. For winter sports, knitters have developed parkas and fleece-lined jackets with hoods attached, ski shirts, hockey hats, and scarfs and hats sold as a set. Wristlets, wool socks, mittens, and gloves have staged a comeback.

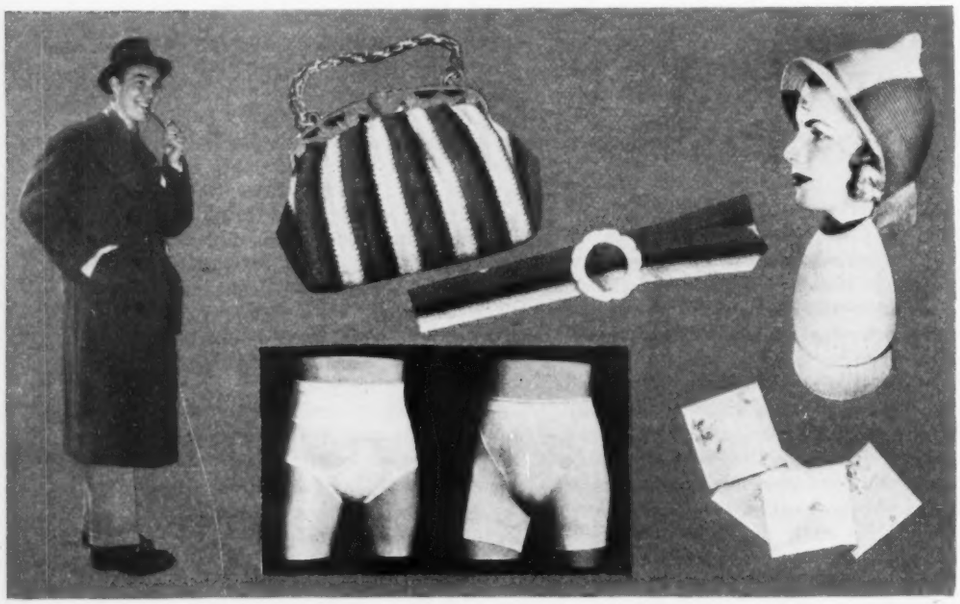
Jersey slacks and knitted sports shirts have been brought out for women who enjoy yachting. Two-piece beach pajamas, culottes for bicycling, full-fashioned lisle hose for active sports and spectator wear, a capelet for reading in bed—these are other recent developments. Introduced last year was a knitted wardrobe consisting of a cardigan, slipover, and skirt; the complete outfit retails at $15; the skirt and slipover at $10.95; cardigan and slipover at $8.95; slipover alone at $4.50. New also is a knitted "undershirt," a companion piece to knitted suits and other sportswear. A smart high-fashion item is an all-silk sweater.

The topless-bathing-suit fad for men prompted the development of knitted terry cloth jackets and bathrobes to combat too hot a sun or too cool a breeze. Itself fairly new, the knitted polo shirt is now being offered in a "tailored to fit" style. The supporter-type of underwear for men, now obtainable in several different models, has rapidly gained in favor since it was introduced about four years ago. Sweatshirts, a somewhat earlier development, still retain their popularity among the younger men and boys.

Without doubt other articles of apparel can and will be developed in the next few years. Knitted shirts for business and dress wear are a possibility. In Europe a printed warp-knit fabric is finding an outlet in lingerie, children's dresses, and blouses and summer dresses for women. Originating in England is knitted ray plush for formal wear.

Household Fabrics

Although knit goods have had a limited number of household uses for many years, it is only recently that



Apparel uses for knitted fabrics: overcoat, matching hand bag and belt set, hat and scarf set, supporter-type men's underwear, printed fabrics

knitters have made any serious attempts to explore the possibilities in this field. The absorbency and softness of knit goods suggested the use of these products as face cloths, polishing cloths, and similar articles. Several companies have gone into the manufacture of such items, and some mills have even developed special fabrics in which one or both of the desirable properties mentioned above are more pronounced than in ordinary knitted materials.

About three years ago at a lunch at the Waldorf-Astoria in New York, a group of fashion writers were given something new about which to write, when in came trays of tall glasses, each glass wearing a knitted jacket of Durene and Lastex. Subsequently there were developed similar jackets for cocktail shakers and for the baby's nursing bottle, as well as knitted disks which fit over the bases of stemware to prevent dripping. Still later, jackets were brought out for covering unsightly bottles and jars kept on the bathroom or kitchen shelf.

For a long time knitted baby-blankets have been popular, and some work has been done on the development of full-sized blankets. Several knitters have given thought to upholstery fabrics and slip covers, where the elasticity and stretch of knit goods appear to be advantageous. Knitting of rugs is another possibility which is being investigated. Use of wide flat-knit materials for sheets has been suggested. Curtains, draperies, bedspreads, and tablecloths are now being made on knitting machines and on so-called knitting looms.

Industrial Uses

While somewhere in the neighborhood of 40% of the total yardage of woven cotton fabrics goes into industrial applications, probably less than 5% of the total production of knitted fabrics is for industrial use. For some time there have been knitted laundry bags and dye nets, and knitted tubing has been used for covering dye tubes and in the meat packing industry. An extension of the last-mentioned application is in the fast-growing quick-frozen-food industry, where knitted tubing is used for incasing chickens—and possibly other foods—before freezing. Comparatively new also is the use of knitted tubing in the manufacture of rubber garden hose. At present the electrical industry is interested in knitted tubing as a covering for wires.

However, the knitters are just beginning to visualize the potential market for their products in the industrial field. Some believe that certain types of filter fabrics might well be produced on knitting machines; while others see a possibility in acoustical textiles for absorbing sound in radio broadcasting studios, theaters, hospitals, churches, and offices. Battens made of knitted fabrics and then treated with chemicals to absorb noxious gases might find application in certain chemical manufacturing operations. Brattice cloth is among the numerous other industrial uses which have been proposed. Certain of the methods, such as those employed in producing ladderproof fabrics and for rendering wool shrinkproof, which are used in manufacturing articles for wearing apparel, may possibly be extended to some of these knitted industrial fabrics. Glass fibers, which have recently been made available, may find application in knit goods for industrial use. In this search for wider markets, the knitters are thinking less of invading fields where woven fabrics already have a stronghold and more of creating entirely new uses for textiles.

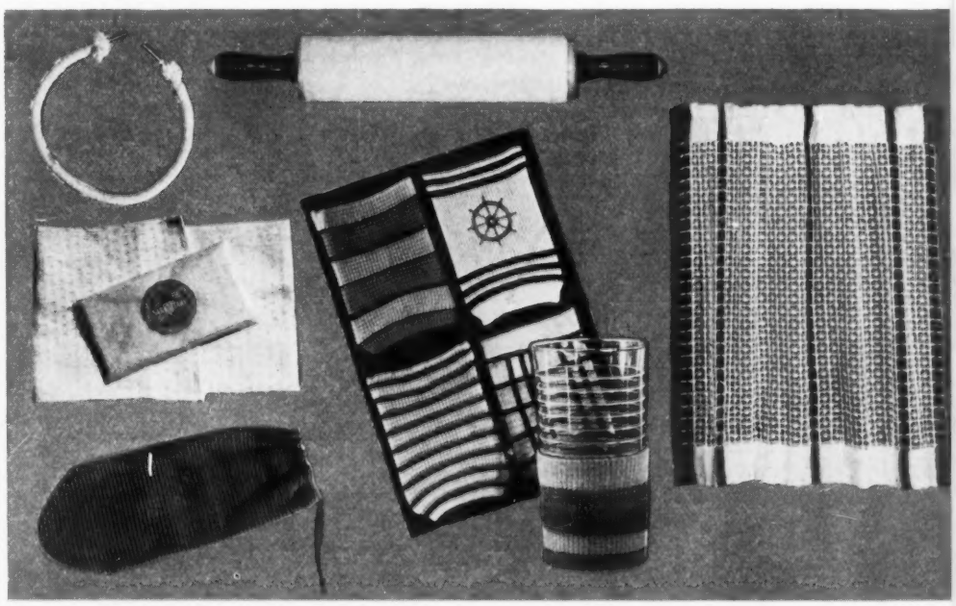
Research Needed

Many knitters feel that the household and industrial markets offer the largest opportunities for increased sales of knitted products. There is a definite feeling also that although nothing can take the place of individual initiative in the development of new products, there are some things which can be accomplished better by group action. Various proposals have been made to stimulate the thinking of the knitting industry as a whole in the direction of new product development. One suggestion is the award annually of a prize for the most outstanding advance in the knitting art. Another is that the industry should establish one or more fellowships to conduct a scientific investigation to determine in what specific directions lie the greatest opportunities for the development of new knitted products.

Study of Characteristics

Briefly this latter idea—and it is only an idea—calls for the establishment of research fellowships at some suitable place, such as Mellon Institute, Massachusetts Institute of Technology, or the National Bureau of Standards. The research fellows, working under competent direction, would first investigate the properties desired in a large number of household and industrial fabrics which are used in large quantities. They next would make a comprehensive study of various types of knit goods to determine whether any of these knitted products fit those requirements or can be so modified as to meet them. Although this idea was broached only a few weeks ago, it is being well-received throughout the industry.

If it is decided to inaugurate a cooperative research project along the general lines outlined above, there is reason to believe that the knitting machinery companies would be willing to add their financial support to that of the knitters. It is probable also that certain of the trade associations would become active in this movement.



Household and industrial uses: wire covering, rolling-pin covering, face and hand towel, shoe bag, drinking-glass jackets, window curtain

Pairing, folding, labeling, stamping and boxing full-fashioned hosiery

PRODUCTION PLANNING

For full-fashioned hosiery mill makes possible accurate scheduling and control of all operations

By K. B. KEEFER
MacDonald Bros., Inc.

TO BE SATISFACTORY, a production planning and control system for a full-fashioned hosiery mill should (1) provide an inventory control for silk, cotton, and wool; (2) provide a means of instituting and controlling the preliminary raw material processing, i.e. the winding of yarn; (3) furnish a means of starting the knitting operations and of controlling all hosiery in process—this is particularly true where a stock is maintained between legging and footing or between the finishing operations; (4) provide control of seconds and rejects; and (5) furnish means in the production department to compare attainment with blanket authorization. A system meeting these requirements was installed in the several widely separated plants of a nationally known hosiery company, and has now been in successful operation for a number of years. In the description given below, the writer has endeavored to include sufficient details to permit installation of the system by other plant executives who may wish to adopt it.

To begin with, an explanation of the point of origin of orders will aid in understanding what follows. The full-fashioned hosiery industry has two main seasonal style periods—spring and fall. The company which installed this system holds a salesmen's convention prior to each season. At this meeting the management decides, from past experience, and based on the season's apparel color card, the styles, colors, and quantities to be made. This information is given to the purchasing department and to the production department as blanket authorization to procure raw materials and to manufacture. Manufacturing is entirely to stock.

The scope of the system installed was broadened to tie in the time-keeping activities, in that tabulating equipment was also provided. Through this method, all time cards (job cards), requisitions, and records of quantities manufactured are readily sorted by styles and orders. Further, this equipment makes possible the compilation of detailed sales analyses by styles, colors, salesmen, or by any other desired classification.

During this installation a novel departure from accepted hosiery practice was made. Usually all quantities of hose are measured in dozen pairs. In the case of this company, quantities are now stated in pairs or hundreds of pairs. This facilitates extensions and clerical work.

Forms Used

The accompanying illustrations of major forms used with this installation, in connection with the following explanations, will clarify the operation of the system:

Manufacturing Orders, Figs. 1, 2, and 3, size 5x8 in., originate in the production department and contain information as to the mill in which the work is to be done, the style, color, quantity by size and by bundles, quantity and kind of yarn, and also the knitting machine (legger) on which the work is to be done, as well as the scheduled date. The information concering the machine and scheduled date will be explained later in this article. Manufacturing orders are made out in four copies. Fig. 1 is used for the production department's copy and for the pro-

cess stores' copy, the difference being only in color of form; Fig. 2, for the winding department; and Fig. 3, for the packing department. The winding department's copy of the manufacturing order is the raw-material requisition. This form contains the estimated amount of yarn required to produce the hosiery ordered, and serves as authorization for its withdrawal from silk stores. Inasmuch as the management authorizes the purchasing department to procure silk for a season's requirements, the raw material is available before issuance of the manufacturing order.

Bundle Tickets, Fig. 4, size $3\frac{1}{8}$ x 7 in., also originate in the production department. Sufficient tickets to cover the size assortment and bundle make-up accompany the procees stores' copy of the manufacturing order. Order number, style and color, quantity, date issued, kind of silk, and lot number are included when the tickets leave the production department. In addition, information on knitting machine number, bundle number, quantity, and order number are entered on the detachable stubs.

Job Cards are illustrated in Fig. 5. These forms are standard tabulator machine size ($3\frac{1}{4}$x$7\frac{3}{8}$ in.) ruled to suit the plant's requirements. The winding department's card is padded with a flimsy, which allows the making of a duplicate record to serve as an identification slip for the yarn between the winding operations and its delivery to the knitting machines. The Job Card form used for all other productive operations is filled in by the process stores' clerk when the work is started, and times are entered by a recording clock. From the information on the job cards, production control (through posting to manufacturing orders) as well as payroll data are obtained.

Raw Material Control comprises two forms, as shown in Fig. 6. Each is 5x8 in. in size. The form at the left is maintained in the winding department through posting of yarn movements as furnished by manufacturing orders and job cards. That shown at right is maintained in the purchasing department, a card being allotted to each supplier of yarn. It might be explained at this point that purchased raw silk is delivered by the silk vendor direct to the silk throwster's plant, on the purchaser's order, and that the silk is not actually available for manufacturing until after it has been "thrown" and returned to the hosiery manufacturer's plant.

Weekly Production Reports, Fig. 7, $8\frac{1}{2}$x11 in., originate in the process stores. This report lists by orders the quantities manufactured on the knitting machines. It is sent to the production department and there posted against the planning book.

The Planning Book is a record in loose-leaf ledger form ruled for 26 weeks. In this book the management's blank authorizations of the succeeding season's quantities are planned in advance by machine number and are scheduled by dates. This book serves as a "follow-up" and control of manufacturing orders.

Method of Operation

The method of operation is as follows. When the management has given blanket authorization for a season's production, the production department plans the actual knitting by machines and schedules the operations by dates. It must be remembered that a season's styles will contain a wide variation in kinds of

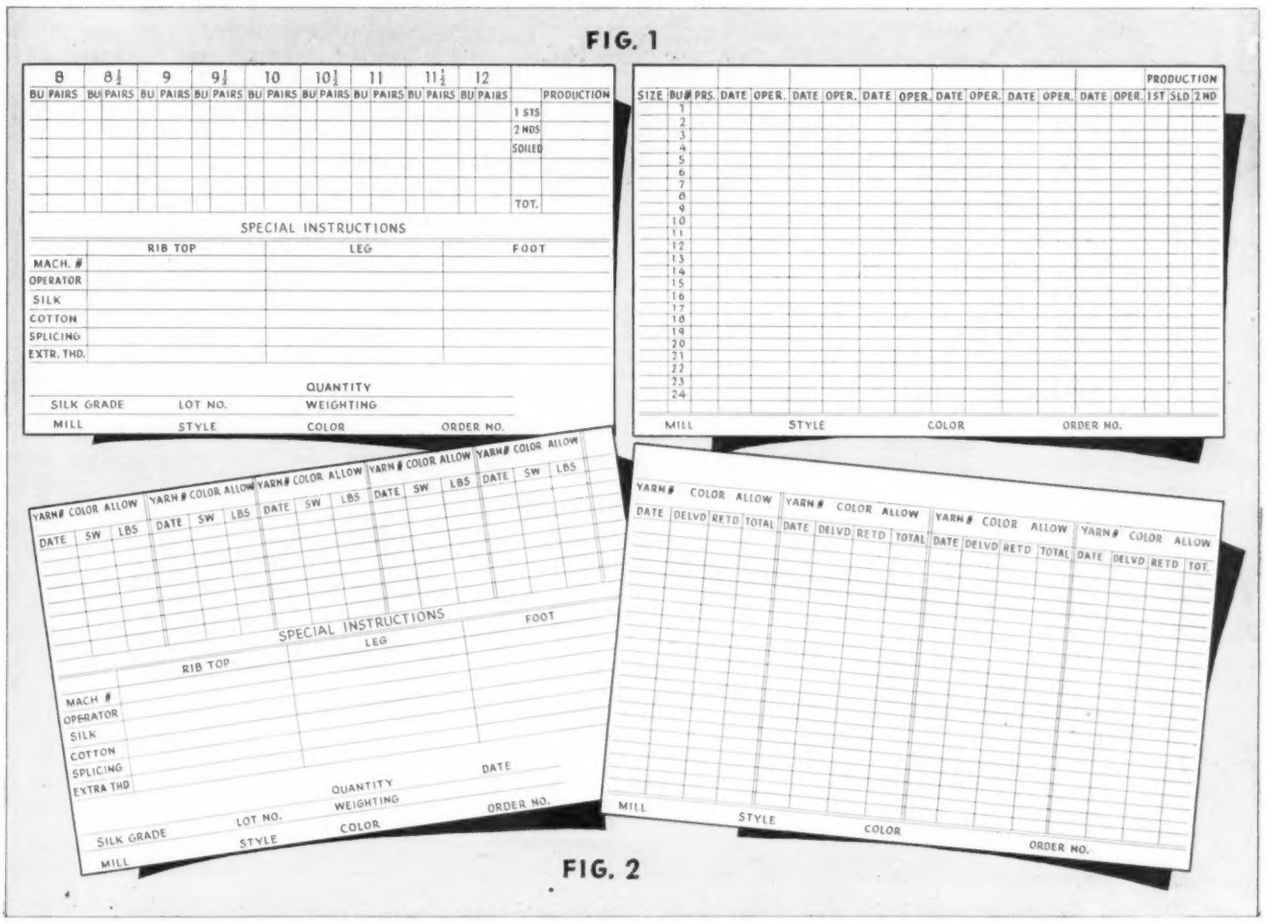


Fig. 1. Manufacturing order copy for process stores and production department file (obverse and reverse sides). Fig. 2. Manufacturing order copy for winding department (obverse and reverse sides).

FIG. 3

SIZE	BU#	PRS	DATE	OPER	DATE	OPER	WEIGHT	REMARKS	PRODUCTION 1ST	SOILED	2 ND
	1										
	2										
	3										
	4										
	5										
	6										
	7										
	8										
	9										
	10										
	11										
	12										
	13										
	14										
	15										
	16										
	17										
	18										
	19										
	20										
	21										
	22										
	23										
	24										

MILL STYLE COLOR ORDER NO

FIG. 4

MFG ORDER NO. _____ SIZE _____

STYLE NO. _____ COLOR _____ QUAN. _____

DATE _____ LOT NO. _____ SILK _____ BUN. NO. _____

OPER #	MCH #	WKM #	GOOD	BAD	INSP #	OPER #	MCH #	WKM #	GOOD	BAD	INSP #
1						9					
2						10					
3						11					
4						12					
5						13					
6						REBOARDS					
7						REMENDS					
8											

1ST QUAL. 2ND QUAL. SOILED 3RD QUAL.

FOOTER ORD NO. ___ BUN NO. ___ QUAN. ___

LEGGER ORD NO. ___ BUN NO. ___ QUAN. ___

FIG. 5

STYLE NO. & COLOR		OPERATION NAME				DEPT. NO.	WORKMAN'S NO.
WKM #	DEPT #	ORDER #	MCH #	STYLE # & COLOR	LBS OR PRS.	HRS	DOLLARS BURDEN

STOP	PROD. HRS.	SIZE			
START		QUANTITY			
STOP		BUNDLE NO.			
START		WEIGHT			
STOP		TOTAL PRS.	P.W.	DOLLARS	REMARKS
START					
ORDER NO.		HOURLY RATE	D.W.		
MCH. NO.	TOTAL WT.		BURDEN		

FIG. 5

STYLE NO. & COLOR		OPERATION NAME						DEPT. NO.	WORKMAN'S NO.
WKM #	DEPT #	ORDER #	MACH #	STYLE # & COLR	LBS OR DOZ.	HRS	DOLLARS	BURDEN	

STOP	PROD. HRS.	POUNDS	BOBBINS	SPOOLS	LOT #	YARN #	COLOR	
START								
STOP								
START								
STOP		DOZENS	P.W.	DOLLARS				
START								
ORDER NO.		HRLY RATE	D.W.					
			BURDEN					

FIG. 6

NO. OR SIZE	ARTICLE	LOCATION	UNIT	MAX. / MIN.

ON ORDER			RECEIPTS			DELIVERIES				DELIVERIES			
DATE	ORD. NO.	QUANT.	DATE	ORD. NO.	QUANT.	DATE	ORD. NO.	QUANT.	BAL.	DATE	ORD. NO.	QUANT.	BAL.

FIG. 6

ORDER NO. ORDER NO.

LOT			RACK NO.				MACH #	QUANT	STYLE	MACH #	QUANT	STYLE
DATE	QUANT.	BAL.	DATE	QUANT.	BAL.	AVE STOCK	DATE	LEGS	FEET	DATE	LEGS	FEET

ORDER NO. ORDER NO.

MACH. #	QUANT	STYLE	MACH. #	QUANT.	STYLE
DATE	LEGS	FEET	DATE	LEGS	FEET

Fig. 3. Manufacturing order for packing department (reverse side; obverse same as copy for process stores). Fig. 4. Bundle ticket. Fig. 5. Job card used for all productive operations except winding (left); job card used for winding operations (right). Fig. 6. Raw material inventory control cards for winding and purchasing departments.

yarn as well as gages of machine; also that always there are certain styles which, because of their popularity, will overload certain classes of machines.

When the various styles authorized have been assigned to proper machines and scheduled for time, the planning book is used to issue manufacturing orders in sufficient time to allow for the winding of the yarn. Ordinarily, orders are issued in quantities of 1,000 pairs. The production department, from its records of past performance, specifies the quantity of yarn to complete the order and determines the assortment of sizes. Manufacturing orders are filed in the process stores' offices, in visual card files, for ready reference and posting.

Withdrawal of Silk from Stores

When the copy of the manufacturing order is received in the winding department, the authorized amount of yarn is withdrawn from silk stores and skein-wound to spools. Then, the flimsy and job card are made out and attached to the tray of spools. After cone winding, the job card serves as payroll authorization and the flimsy identifies the yarn to the knitter.

Due to the nature of the material, it is possible to skein-wind an indefinite length of time before cone winding; but in the case of cone winding it is only possible to perform this operation a few days before knitting, because of the danger of drying out and molding. This short period, coupled with the fact that orders are issued to the winding department several days before the scheduled date for the starting of knitting, allows a certain flexibility of the system, necessary for successful operation.

Sufficient bundle tickets, properly filled in to identify the hosiery to be made are sent with the process stores' copy of the manufacturing order. It will be noted that the bundle tickets are provided with perforated stubs. After being filled in by the process stores' clerk, these serve as receipts for work produced by the leggers and footers. When bundle tickets are issued to legger operators, entries of machine and workman's number are made; also, when the bundle of finished hosiery legs is returned to the process stores after knitting, entries are made of the pairs made, pairs good, etc. The same procedure is followed for the succeeding operations of joining, seaming, mending, boarding, and inspecting.

Six spaces will be noted on the reverse of the manufacturing order which is used by the process stores (Fig. 1). Daily entries of date, operator number, and pairs produced (if different from the quantity called for on the order) in the operations of legging, footing, joining, seaming, mending, and inspecting are made by the process stores' clerk in these spaces. This information is obtained from the operator's job cards (time-keeping records) which are filled in by the clerk as each bundle is given out.

At weekly intervals a recapitulation—the weekly production report—by orders is made for the operations of legging and footing. This report furnishes the production department with detailed data as to the status of all knitting orders. It might be added that no attempt is made by the production department to schedule orders by dates or to place orders by machines on operations other than those of knitting.

As has been mentioned, the planning book provides space for 26 weeks' entries. These are ruled vertically, while the horizontal ruling is such that spaces are provided for each knitting machine. From records, a table of average production for each knitting machine is developed. With this figure available, a simple computation gives a close estimate of the time required to knit the number of hose called for on any machine. It must be understood that the average production figure will show some variation for different styles, depending on the number of "extra threads," special features such as "picot" edge welt, and on the number of "dips" in the case of lace machines.

The details of operating the planning book include laying out, with colored pencil, the scheduled spaces (days) for completion of an order; and of spotting attainments, from the weekly production report, for comparison. This comparison of scheduled with actual production permits very close control.

Check on Total Pairs

On manufacturing orders and bundle tickets will be noted spaces for the recording of firsts, seconds, etc. One of the valuable advantages of this installation is the ability to obtain an exact check of the total pairs. The posting on each bundle ticket of the operators' numbers and the quantities made at each operation (with the insistence on an accurate count at each operation) definitely places the responsibility for any shortages. Such control is of prime importance for a product of this kind. Silk hosiery, after the operation of seaming, is wearable, and its size lends itself to petty thievery on the part of operators. Before the installation of this control, unaccountable disappearances of as many as 20 pairs in a 1,000-pair order were not uncommon.

A further advantage results from the accurate counting and recording of the actual number of hose in any bundle. Operators are paid on a piecework basis; and the few pairs that might be "short," for inspection or other causes, were before installation of this system, paid for twice on several operations. This amounted at times to as much as 3% of the piecework payroll for the finishing departments. With the system described in operation, such double payment is eliminated.

FIG. 7

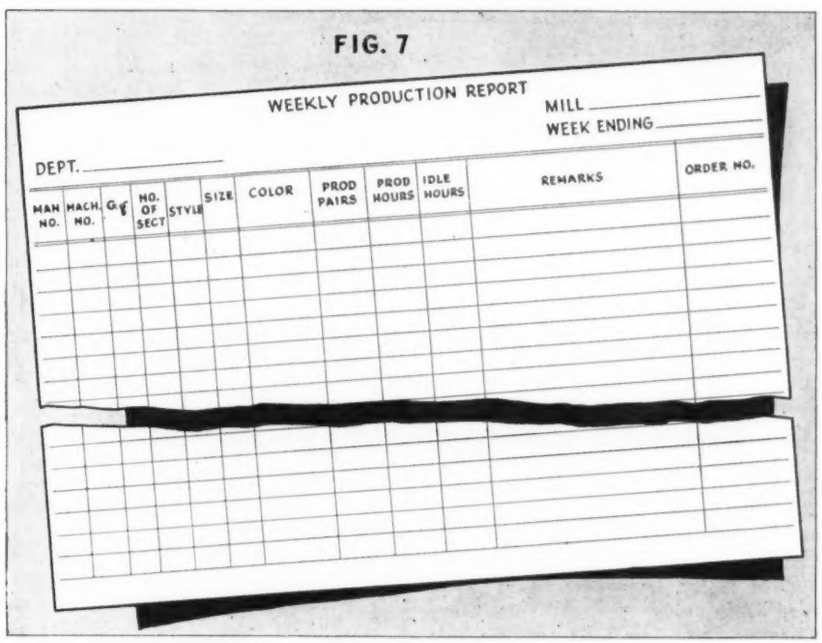


Fig. 7. Weekly production report

NOTES ON FIXING

Preventing unnecessary repairs and increasing production of circular hosiery machines

By I. C. MOORE

MANY MILL MEN, being anxious to get the highest production per operative, lose sight of the fact that beyond a certain speed a circular hosiery machine will actually lose production, instead of gaining it. This is due to the increased number of stops to replace defective needles, tighten loose cams (or to replace those that have worn out prematurely), and to make other repairs caused by excessive speed.

A fixer took charge of a section running fancy half-hose. The machines were operating at a speed of 240 r.p.m. and produced an average of 4 doz. per machine in 8 hr. It required an average of one new needle for every 2 doz. knit. After the speed was reduced to 220 r.p.m., the machines ran better, they were not stopped so often for adjustment, the average production rose to 5 doz., and one needle was sufficient for every 2½ doz. knit.

Normal Speed Best

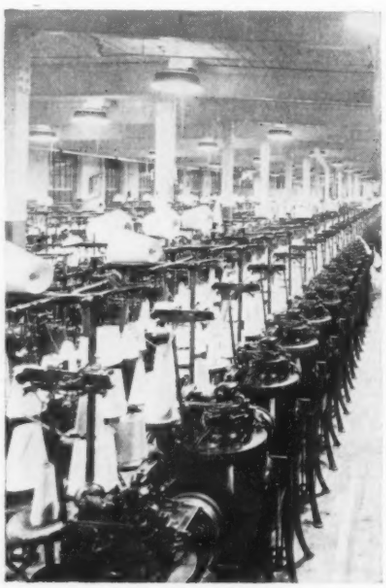
Fixers should insist that their machines be run at the normal speeds recommended by the builders—and not rushed. They should keep them running as near to these speeds as possible by giving systematic attention to the power transmission equipment. They should insist on a uniform grade of needles, and should not form the habit of bending the stems when putting them in. They should take plenty of time when oiling, see that the lubricant is reaching the proper spot, and use only the best grades of oils. If the fixer will do these things, he will save himself a lot of work. He will save his employer needles, sinkers, cams, and other parts. He will increase production and improve the quality of the product.

Transmission belts on knitting machines should not be allowed to slip and jerk, as this strains the machines and is likely to disturb settings. The belts should be cleaned and dressing applied once a week to keep them pliable. It is a good idea to check the speed of each machine once a week. If the variation in speed is found to be as high as 10%, something should be done about it.

Don't Mix Needles

It is not good practice to mix two different makes of needles on the same cylinder, although this is sometimes done. Two needles of different make may look exactly alike, but, when placed in the same cylinder, may be sufficiently different to mark the fabric.

When needles come from the factory, they are suitably flexed to give them friction in their slots if they are of the right gage. It may be necessary to bend one now and then,



Proper lubrication is essential to efficient operation of circular hosiery machines

but it is best not to get the habit. Hand flexing is not conducive to uniformity, and needles will last longer and give better service if the friction on each is more uniform.

Careful Oiling

Not all fixers oil the machines on their sections, this job sometimes being assigned to an apprentice fixer or helper. These assistants are likely to look upon this work as just a matter of routine. Not being directly responsible for the maintenance of the machinery, unless they are unusually conscientious, they may perform this duty mechanically and more or less indifferently. In their haste to get the job over with, or possibly because they are not so familiar with the machine as they should be, they may overlook an important oil hole. Oil holes may get stopped up with lint and dirt, and the oil will be prevented from reaching the bearing.

Some time ago in the mill with which the writer is connected a knitter found the belt on one of her machines squeaking and sliding on the tight pulley, but the machine was not budging. When the fixer got there, he found that the bearing was frozen. The oil hole had become stopped up with grit, and the oiler had failed to notice that the bearing was not getting proper lubrication. It took the fixer and the oiler 5 hr. to hammer out the shaft and put in a new bushing. If the oiler had been thinking of what he was doing, this would not have occurred.

Fixer Should Oil Machines

There are two reasons why the fixer should oil his machines. In the first place, he is more familiar with them; he knows where every oil hole is; he knows the most important bearings, how often they require oil; he soon learns whether or not he is using the right kind of lubricant.

In the second place, he realizes the importance of proper lubrication; he knows that if his machines are not oiled thoroughly and regularly, he will have more work to do; his section will require more parts; and he will not get the quality and production he otherwise would. Realizing these facts he will exercise more care when oiling than will a less responsible individual.

The needle latch is one part on a knitting machine which is more often over-lubricated than under-lubricated. While latches open and close several thousand times an hour, unlike the stems and butts of the needles, they are subjected to comparatively little friction, and, being small and delicate, they will tend to become gummed from too much oil. It is better to oil latches once every Monday morning after the room and machine have had plenty of time to get thoroughly warmed. Holding an oily feather against the latches as the machine is turned by hand is probably the best method of application.

KNITTING NEEDLE COUNTER

Facilitates accurate determination of circular-machine yarn consumption

By J. FREDERICK CAHILL

ESSENTIAL TO successful operation of circular knitting machines is the accurate calculation of pounds of yarn per feed per hour consumed by each machine. This can be done by counting: (a) the number of needles in the cylinder; and (b) the number of needles occupied by 1 yd. of yarn. I quite realize, from experience, that the process of counting the number of needles in a cylinder by means of spacing off a number of leads with a pair of dividers and stepping the spaces around the cylinder is a tedious process; that the counting of the number of needles occupied by 1 yd. of yarn is still more tedious; and that both operations are subject to gross inaccuracy.

I would suggest, therefore, the use of a needle counter, as shown in Fig. 1. Such a counter should be included in every spring-needle knitter's kit of tools. It can be easily made by any competent machinist.

Outside diameters of the disks for various gages are as shown in Table I. The effective diameters of the several disks are equal to these outside diameters minus twice the depth of the slots cut into them, since the needles actually rest in the base of the slots.

The method of application of the counter is to mount the holder on a presser stand, between two feeds, and slip on the disk for the gage of the machine being tested. As each disk contains 100 slots, each full turn of the counter means 100 needles, and fractions of turns at the end can be read from the minor graduations of tens and fives; the few between fives can be read at a glance. By setting "100" on a marked needle and turning the cylinder one revolution, one can readily count the number of complete turns of the disk, and the slot that rests on the marked needle shows the exact number of needles over even hundreds.

In counting the number of needles occupied by a measured yard of yarn, the zero or 100 mark should be set so that cut No. 1 rests on the needle holding the first white stitch of the marked yard, and the cylinder turned until a cut in the counter rests on the needle holding the last white stitch. The graduations on the counter will show at once how many needles are occupied by the yard of yarn. Of course, absolutely accurate measurement of the yard of marked yarn is assumed.

Using this needle counter, the following formulas for consumption determination are applicable:

Needles in cylinder ÷ needles occupied by 1 yd. of yarn = yards of yarn per revolution of cylinder. Yards per revolution of cylinder × r.p.m. of cylinder × 60 min. = yards of yarn consumed per hour. This figure, divided by the number of yards per pound of the count of yarn in use equals pounds per hour per feed; and pounds per hour per feed × No. of feeds = Machine-hour production at 100% efficiency.

Illustration of Method

To illustrate the method of calculation, let us assume a 24-in. cylinder with 24-gage needles; 8 feeds using 20/1 cotton yarn; the machine operating at 50 r.p.m. The total number of needles would be somewhere near 1,200. Let us assume 1,200 as a basis for calculation and assume that 1 yd. of 20s yarn occupies 208 needles. 1,200 ÷ 208 = 5.769 yd. per rev. 5.769 × 50 r.p.m. = 288.45 yd. per min. which × 60 min. = 17,307 yd. per hr.. There is 16,800 yd. per lb. of 20s cotton. 17,307 ÷ 16,800 = 1.03 lb. per hr. per feed. 1.03 × 8 feeds = 8.24 lb. per machine-hr. at 100% efficiency.

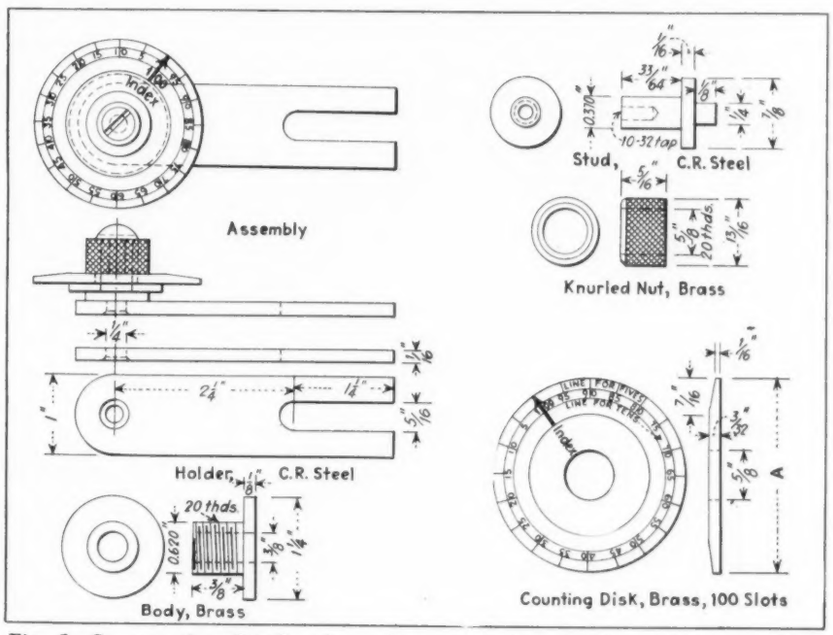


Fig. 1. Construction details of needle counter for circular knitting machines

TABLE I

Outside diameters and depth of slots for needle-counter disks for circular knitting machines

Gage	Outside Diameters	Depth of Slots
8	6.034	0.033
10	4.841	0.033
12	4.045	0.033
14	3.467	0.028
16	3.034	0.025
18	2.697	0.022
20	2.427	0.020
22	2.206	0.018
24	2.026	0.018
26	1.869	0.016
28	1.737	0.016
30	1.620	0.014
32	1.520	0.014
34	1.430	0.013
36	1.352	0.013
38	1.281	0.012
40	1.218	0.012
42	1.159	0.011

REDYEING SILK HOSIERY

Extreme care necessary to make a salable product from a non-salable one

By WILLIAM T. LEGGIS

REDYEING AND refinishing of women's silk hosiery may be necessitated by improper boiling-off, poor matching, uneven dyeing, faulty finishing, and similar causes. However, most redyeing is occasioned by hosiery shades becoming outmoded, and is resorted to as the only means of making a salable product from one which is non-salable. Redyeing of the former type comprises only a small percentage of the total volume of dyeing and all comes from one particular source. On the other hand, redyeing of the latter type constitutes an appreciable percentage of the total volume of dyeing, particularly at change of seasons, and may come from any number of sources. For this reason, a discussion of the handling of redyes of this latter type will amply cover the subject of redyeing.

Each lot of hosiery to be redyed should be sampled, and this sample tested in the laboratory, for stripping and redyeing properties. This will facilitate the sorting of the hose into batches, and at the same time will eliminate the hazard of ruining a batch of hose. An elaborate layout of laboratory equipment is not necessary; a few beakers, test-tubes, flasks, burners, etc., will suffice. The problem presented to the dyer is to reprocess hosiery which has been dyed, dull-finished, splash-proofed, and dry-transferred. He is able, by use of the laboratory, to predetermine the time, temperature, and method of processing to be used.

Removal of Transfers

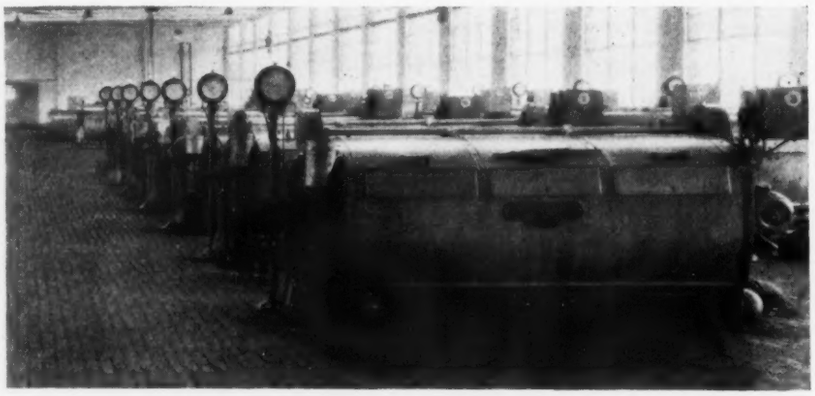
Removal of dry-transfers is the first reprocessing factor to be considered. Nearly all transfers, purposely, are of the soluble type, composed of insoluble pigments bound together with chemicals which are readily emulsifiable in hot alkaline and soap solutions. Therefore removal of transfers is a twofold job; that is, dissolution of the transfer from the fabric, for which a mild alkali is used, and dispersion of the released pigments throughout the bath, for which purpose soap is used. Soap prevents agglomeration of the pigment, thereby preventing spotting. Occasionally, transfers of the insoluble type are used. In this instance, it is necessary, before reprocessing, to ascertain the proper solvent to be used. Removal of these transfers requires hand-spotting of each of them. Soluble transfers should be removed before the hosiery is stripped, as stripping agents of the hydrosulphite or the sulphoxylate type tend to fix the transfers, whereupon they become insoluble.

Removing Sizing and other Materials

The next problem to be considered is the removal of the finish. Primarily, finishes consist of sizing materials (starches or gums), inert pigments for delustering, and splash-proofing materials (usually gelatine emulsions of waxes and aluminum salts). Splash-proofing materials of this nature tend to prevent wetting out of the hosiery; therefore it is necessary to remove them before attempting to strip the goods. This may be done by treating for 10 min. in a short bath of 2% ammonia solution, at 120° F. If 3% of soap is added to the solution, this treatment can be carried out at the boil and the soluble transfer and splash-proofing materials removed simultaneously.

Stripping can be effected by the use of any one of a number of good stripping agents on the market. One widely used stripper is sodium hydrosulphite. When this compound is used, a small percentage of soda ash or other alkali should be added to the bath to keep it alkaline. This will prevent decomposition of the hydrosulphite into sulphides which tarnish the dyeing machine. Hosiery can be stripped effectively by boiling for 10 to 15 min. in a short bath containing from 3 to 5% of hydrosulphite. This treatment should be followed by a warm rinse at 120° F., so that the goods will be in good condition for redyeing.

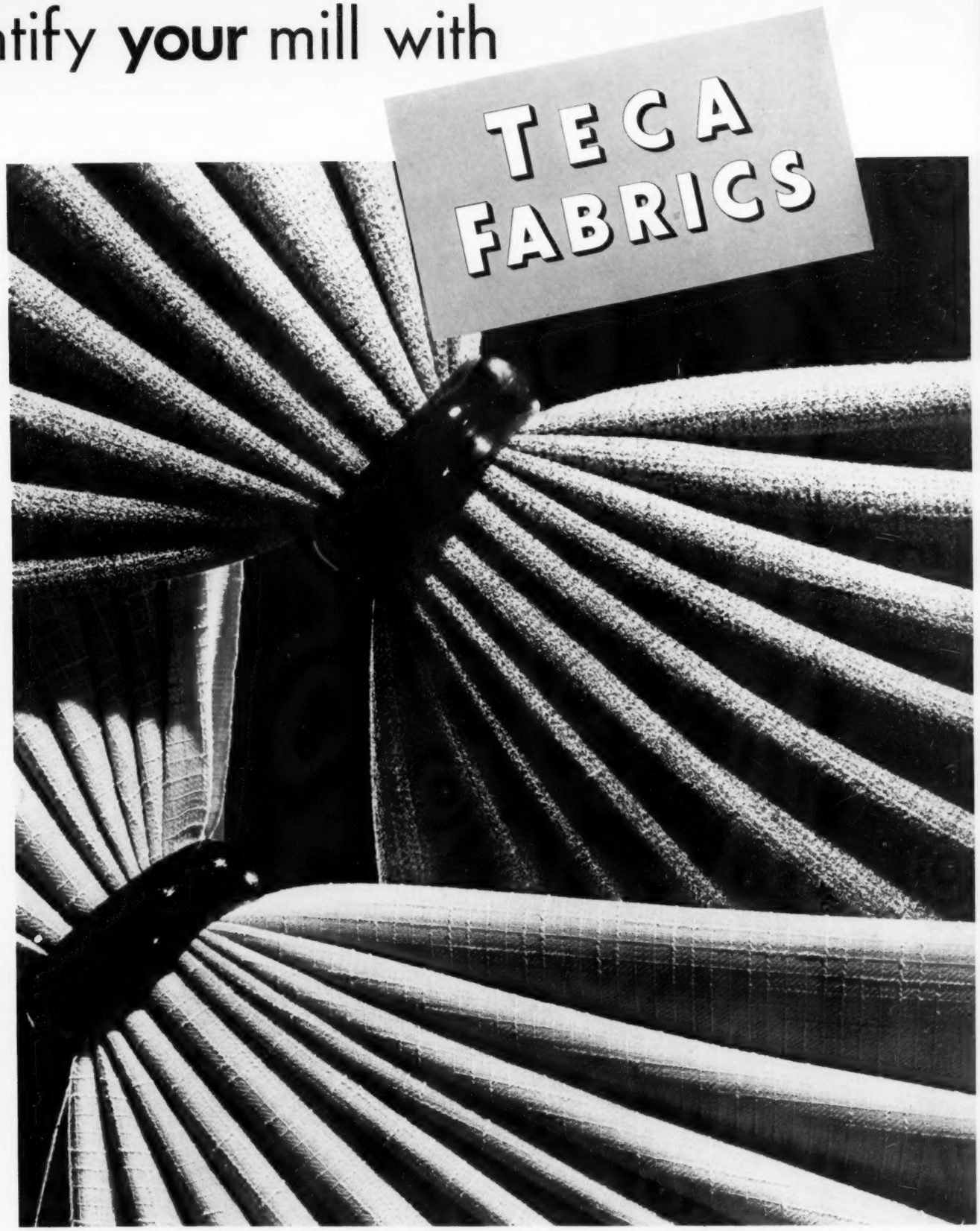
Basic zinc sulphoxylate formaldehyde is another stripper which is used quite extensively in stripping silk hosiery. This is an insoluble compound, and may be used as such, since the finely divided particles will disperse throughout the bath. However the compound is soluble in a dilute acid solution, and is more effective when used in this way. After the goods have been stripped with this agent, they should be boiled in a mild alkaline bath for about 5 min., before being allowed to come in contact with any soap. This will tend to prevent the formation of spots due to precipitation of insoluble zinc compounds, which is a hazard when using sulphoxylate.



Hosiery redyes should not be subjected to prolonged boiling; dyeing time should be kept at a minimum

When the stockings are being dyed to shade after they have been stripped, close matching should be secrificed and dyeing time kept to a minimum, in order to obtain a better-appearing and a more serviceable final product. Under no condition should hosiery redyes be subjected to prolonged boiling.

Identify **your** mill with



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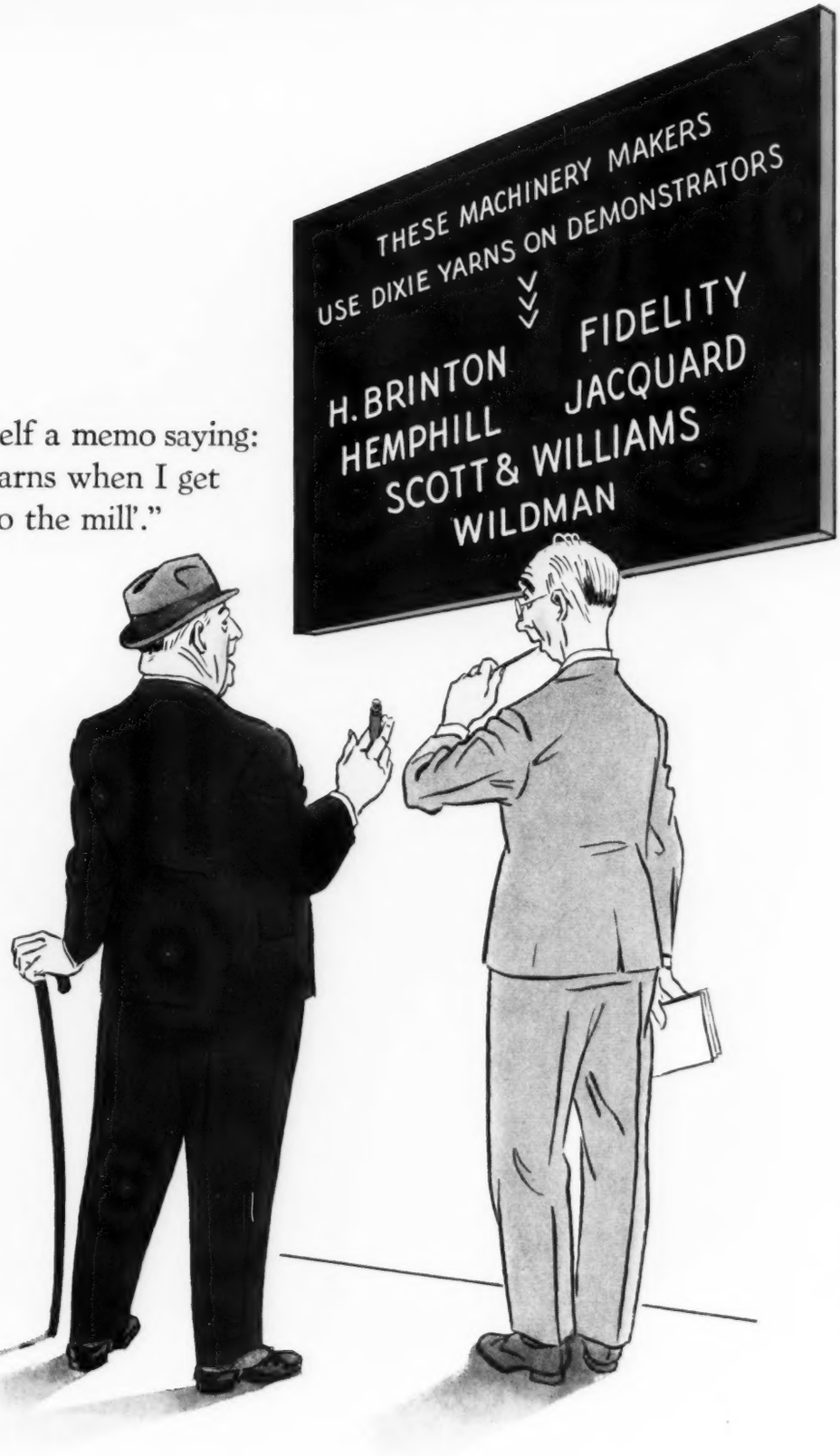
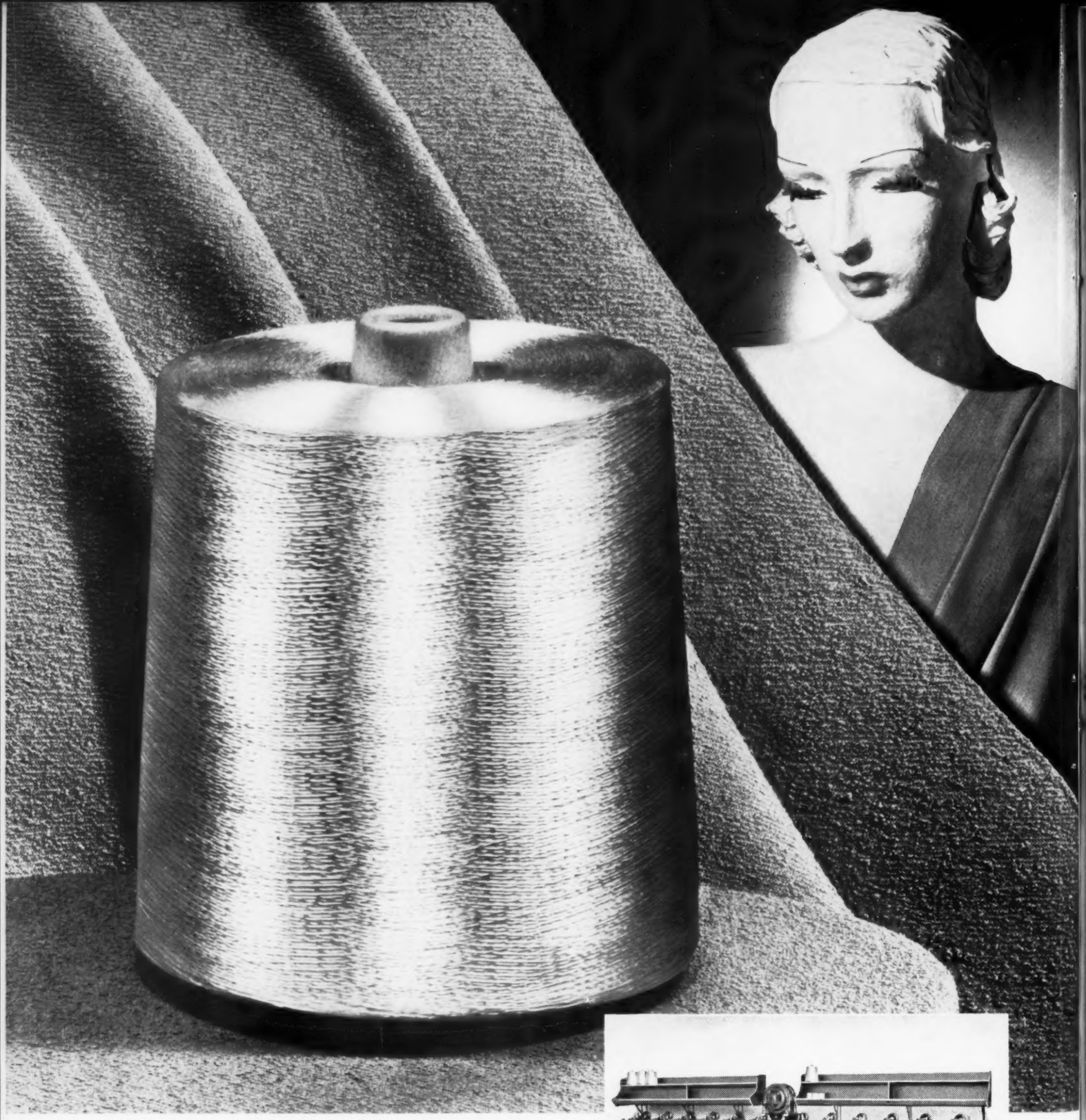


DIXIE DURENE . . . A PRODUCT OF CONTROLLED MANUFACTURE

Dixie **MERCERIZING COMPANY, Chattanooga, Tenn.**



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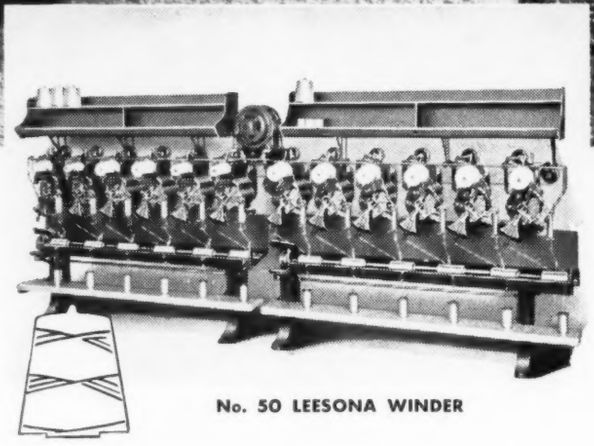

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THE EDITOR SAYS

Arrogant . . . Sloppy

IT IS EASY to understand the South's resentment against President Roosevelt's speech at Gainesville, Ga. Seldom has a man in high office uttered a more ill-advised, arrogant, destructive and sloppy comment.

"Georgia and the lower South may just as well face facts. . . . . The purchasing power of the millions of Americans in this whole area is far too low. Most men and women who work for wages in this whole area get wages which are far too low."

It is not difficult to imagine the reaction of the average southerner to this Presidential slap in the face. Even a Yankee, so long as he has some knowledge of American history, should be able to appreciate it.

A vast section of the country lay prostrate after the War Between the States. Gradually it began to pull itself out. Bit by bit, it won its way against the stifling effects of poverty and illiteracy. Its progress in the last quarter century, particularly, has been one of those brilliant dramas of high adventure which occasionally brighten the pages of history.

Anyone who has traveled in the South during that period knows the miracle that has been wrought—the human reconstruction which has been achieved in the face of still too-long odds.

And to those who have been fighting this good fight, the President rasps: You may as well face facts. Your wages are far too low.

We said that his comment was sloppy. We consider that more inexcusable than its impertinence—because a President has at his command a mass of information and data available to no other individual citizen. He could easily have offered precise comment which would have served a constructive purpose. He could have warned against the invasion of the South by a few low-wage sweat-shop industries, principally in the apparel manufacturing field. These newcomers threaten the established industry of the South, as we pointed out on this page in March 1937. Textile manufacturers, who have advanced wages and reduced hours so rapidly during recent years, are particularly alert to the danger of infection from these few bad spots. They would have been the first, therefore, to join with the President if he had urged that this invasion be checked, and that the disposition of a few States to encourage it be curbed.

But when these same textile manufacturers, with the accomplishments of Code No. 1 behind them, are herded together with the few offenders, and publicly spanked, their indignation quite naturally passes all bounds.

United Front Needed

WE FIND ordinarily articulate prophets are becoming more and more tongue-tied. Personally, we can sympathize with them. Recollection of the attitude which practically all of us took toward the little "interruption" in business when it set in last fall is sufficient to make our faces red and our jaws locked.

Those few who now predict anything are playing them very close to the chest. Instead of debating whether recovery will come in the first or the second quarter, as they were a few months ago, they are now talking about the fall at the earliest—and "well into the fall" at that.

The hard cold fact remains that nobody knows just what kind of a mess we've got on our hands. What started out as a "correction period" graduated quickly into the "recession" class, then became recognized as a full-fledged "depression"—and now is even referred to occasionally as a "panic."

The main reason for this rapid transformation was memory. The wounds of the last depression were still too fresh. Almost automatically, people began to pull in their horns at the first sign of trouble—and within six months became as gun-shy as they were at the very depth of the last crisis. Then, too, of course, the international situation added the final touch.

Only one thing is clear—and that is that we are once again at a stage where some sort of national unity is essential—some sort of concerted resistance to the degeneration which threatens the well-being, and the very safety, of all.

Obviously, the moves are largely up to Washington. One such move was made by Senator Pat Harrison. His attitude and action on the new tax bill represented a brilliant piece of statesmanship—the most heartening news that has come out of Washington in months. If there could be more of this, and less of the bitterness such as that which has accompanied debate on the reorganization bill, for example, we might begin to move up to a little higher ground. The sooner it is recognized that we are again in an emergency, and that a united front is again the need, the better for all of us.

Third Shift Doomed?

IF THE attempt now being made to get voluntary action toward elimination of the third shift in certain parts of the staple cotton goods industry is successful, it will represent the most important move toward self-government in that industry since the equally voluntary maintenance of code hours and wages after the Supreme Court's NRA decision in 1935. Obviously this has nothing to do with present production schedules—but, when the market once more opens up, the removal of the third-shift threat would do more than any other one fact to built up confidence.

Cotton on the March

THE LITTLE pat on the back which we gave the Cotton Consumption Council on this page last month must now become a big hand. The whole movement has started off with a virility which assures its success. The chain stores, through such organizations as the Institute of Distribution, Inc., the Limited Price Variety Stores Association and other bodies, are in this thing with both feet. The inevitable increase in their members' cotton goods sales will yield rich dividends to those associations and to the Cotton-Textile Institute for the time and effort expended.

Knit Goods Week

APRIL 25–29 is Knit Goods Week in Philadelphia—and the April issue of TEXTILE WORLD is Knit Goods Issue. The special Knitting Section starts on page 79.

Naturally, this branch of the industry has not been immune to the new depression, any more than has any other section of business. But those who go to Philadelphia will find a stage of progress and a state of mind which leave no room for defeatism. The several associations have continued to go forward, as will be noted from the symposium in this issue (page 83). The show itself promises to be a record breaker, with 18 new exhibitors, 90% renewal of the old firms, and an inspiring array of new equipment.

LETTERS TO THE EDITOR

Pick Counters

Editor, TEXTILE WORLD:

The article in your issue of Feb. 14, entitled "Gypping the Pick Meter," has caused considerable interest and commotion among mill executives, to such an extent that we feel it should not be passed by without further comment.

Our New England Manager, who has had twelve years' very active experience in this field, has prepared the enclosed article entitled, "Modern Pick Counters are Tamper-Proof."

We would like very much to have you publish this in your next issue, using the sketches enclosed to illustrate the different points brought out in the article. We hope this will be in accordance with your editorial policy.

WM. K. WINKLER,
President, Durant Mfg. Co.

Modern Pick Counters Are Tamper-Proof

By LEO A. NOURIE

A RECENT article written on the subject of "Gypping the Pick Meter" has caused some unrest among mill executives using these pick counters for weaver wage payment. I believe the author of this article has conveyed the impression that the unusual is a commonplace occurrence.

It would be folly to say that such dishonesty is impossible when we read of bank vault thefts and escapes from break-proof prisons. These happenings result in headlines as did the "17 Belmont Silk Workers Arrested" on the gypping of pick meters. The latter, however, is an unusual circumstance, particularly with the modern pick counter.

My experience with pick counters has been with the direct sale of this equipment during the past twelve years, representing a counting machine company which has for 58 years built counting and measuring machines exclusively. During these years I frankly say that many developments have been found necessary to make pick counters tamper-proof. Today we are confident that with a minimum of weave room supervision it is impossible for a weaver to record picks without actually running the looms. With a modern unit it is impossible to remove the counter from the bracket without mutilating its connecting links to such an extent that this would be readily detected.

Let us start with the weaver who loosened the pick counter from its bracket and connected the meter-driveshaft to a fast-running part of the loom. The modern pick counter does not present itself to such possibilities. In the first place, the counter is mounted from the back of the counter and is held to the loom bracket by two $\frac{3}{8}$ in. cap screws. The heads of the cap screws are drilled and lead seals used to prevent any unauthorized removal of the counter from the bracket. (Refer to Fig. 1.)

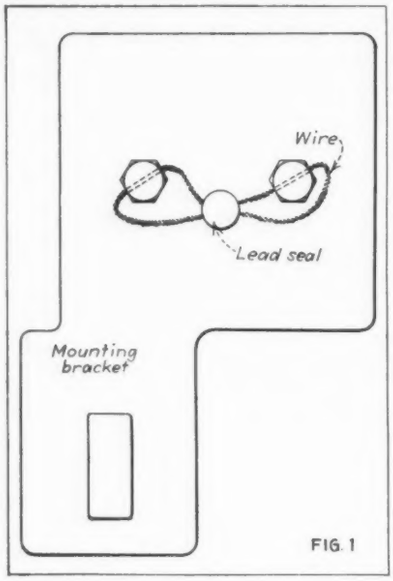

FIG. 1

Assume that the dishonest weaver has a supply of lead seals and tools for sealing. He removes the counter from the bracket, but he is still in difficulties, as the modern counter does not just lift off its universal joint connection. He finds that the connecting rod is slotted and securely pinned *inside* the universal joint with another pin locking the rod to the slotted part outside the universal. (Refer to Fig. 2.) The pins used in the assembly at the factory are securely riveted, and to remove them it is necessary to use a file, punch, and hammer; and in most cases they must be drilled out. If the pin used in the actual installation is properly riveted, the same procedure would be necessary. Therefore, if a mill is unfortunate enough to hire a weaver who would go to this trouble to remove a pick counter, he would necessarily mutilate the universal joint so that it would be easily detected by the most superficial weave-room inspection.

There is little or no possibility of tampering with the connection at the cam or crankshaft. The worm is securely fastened to the loom shaft, a heavy housing placed around the worm and this anchored by means of a tail rod and floor bracket. The connecting rod is riveted to the uni-

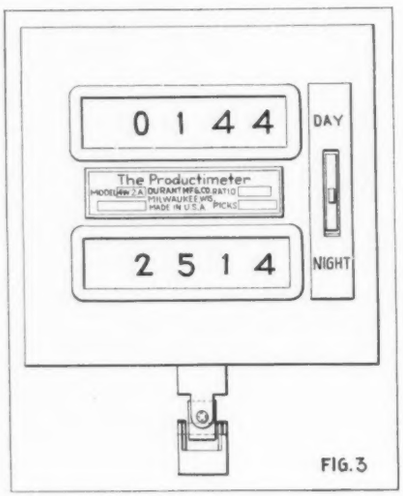

FIG. 3

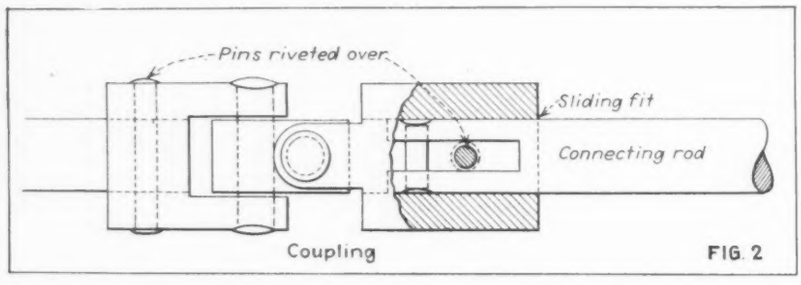

FIG. 2

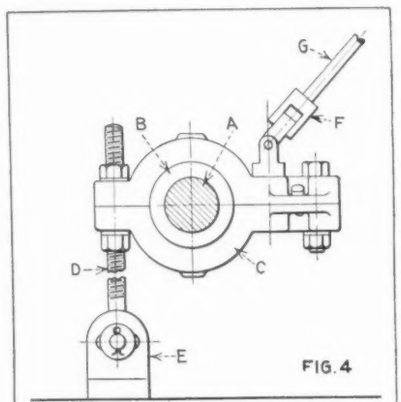

FIG. 4

A - Loomshaft
B - Worm
C - Worm housing
D - Tail stop
E - Tail stop bracket
F - Flexible coupling
G - Connecting rod

versal at the housing. (Refer to Fig. 4.)

Many mills have a checking system whereby counters are read after each shift and a card is left at the loom for the full week. These cards are used for computing the weaver's wages, determining the loom efficiency, and as a check against the yardage taken from each warp. Where such systems are used, the mill receives not only full advantage of the pick-counter system, but also the assurance that the dishonest weaver will be detected on his first attempt.

There is little cause for the mill executive to feel that a dishonest weaver can disrupt his organization and cause the possible failure of his mill. This is especially so if he purchases a pick counter with care and insists on a modern unit manufactured by a concern that has provided for such possible dishonesty.

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Crop Control as Applied to Industry

Editor, TEXTILE WORLD:

We have, particularly for the last eight years, heard much and read much about the very adverse condition of the silk and rayon weaving industry. Many cures have been offered so that one more doesn't matter a whole lot. My reaction is: The farmer gets paid for leaving acres of fertile land idle. We have hog control and other means to keep down over-production and consequent price reduction of agricultural products. Why not apply the same system to looms? In other words, let the Government compensate each manufacturer for leaving 25% of his looms idle. A special seal could be fastened to each loom which would prevent its operation without proper authority. As conditions improve, a certain percentage of machines could be released, or, if matters get worse, seal more looms.

There are approximately 130,000 silk and rayon looms; 25% represent 32,500 machines. Even if it should cost Washington $32,000,000 annually, this would be a small expense considering other amounts spent for various purposes. It probably would prove to be a good investment as, with better prices, mills could operate more profitably and in this manner pay their taxes and continue operations instead of going into bankruptcy.

This idea may sound silly, but I have read other suggestions which would be more difficult to execute. If crop control does the trick, why not loom control?

S. C. VENEY,
Revonah Textile Mills, Inc.
Hanover, Pa.

Comment from the Editor

We don't think your idea is silly. In fact, it is similar to plans which have been tried in other countries and which have been suggested here. The jute manufacturing industry in India has a plan similar to this, whereby looms are sealed and unsealed depending upon the condition of business.

During the discussion of the problems of the cotton-textile industry by the so-called Cabinet Committee, a plan was under review which contemplated the formation of an organization, the stock subscribed by interested mills, to lease from textile plants a certain percentage of productive machinery in the plants, say 25%, for a period of years at a nominal rental. The plan provided that, if demand conditions should justify it, the leased machinery could be put in operation by permitting the owner to pay a reasonable but competitive rental for it.

The Cabinet Committee pointed out that this proposal had the advantage of not destroying textile machinery, thereby leaving surplus equipment available for any increase in demand which may require its operation. The Committee pointed out that it had the disadvantage of requiring a complicated controlling organization, and in its simplified form it would not distinguish between efficient and inefficient mills in the rental process. Furthermore, the Committee stated, the plan obviously did not provide for liquidation of hopelessly antiquated concerns and the creation of new mills or expansion of efficient old ones.

We stated above that we did not consider your idea silly. Nor do we consider it unworkable. However, whether we think it *advisable* is something else again.

As you undoubtedly know, there are two schools of thought on this matter of enforced industry-wide production control. One school takes the position that it is essential in a decentralized industry such as textiles. The other school takes the position that the only real method is survival of the fittest, and that any attempt to hinder the operation of that so-called economic law merely further complicates the industry's problem.

Obviously, it is impossible to state categorically that one of these viewpoints is right and the other wrong. We think we can take it for granted that all of us would prefer to operate without restrictions such as those suggested by you, and those now in effect in agriculture. We think we would agree that it is extremely unfortunate if industry has arrived at the place where that is its only salvation. The main trouble is that, once started, it is so difficult to stop or even to revise. On the other hand, when an industry gets to the condition where some such artificial remedy *is* the only solution, there is nothing much else to do about it. We were in that position back in 1932 and the first part of 1933—and that is why most industries, and particularly the textile industry, were willing to adopt the artificial controls provided for under the NRA. I don't think that the textile industry as a whole is back in the position where it *has* to place itself under those restrictions again. Undoubtedly sections of the industry are.

Our main fear about the whole business is that there is nothing *permanently* beneficial in its operation. You say "If crop control does the trick, why not loom control?" Our answer to that is we don't honestly believe that crop control does the trick. We think sooner or later it will catch up to itself, just as was true in rubber control and coffee control, as practiced by other nations. We think you can control an industry made up of a few units but when you try the job on agriculture, composed of thousands and thousands of individual producers, and on an industry such as textiles made up of thousands of mills, that's something else again. —*Editor.*

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Agrees on F.T.C.

Editor, TEXTILE WORLD:

The article entitled "F.T.C. Policy Stiffens" in the March issue is most understandingly written. I appreciate it all the more because I had an opportunity of talking with your representative at the conference and he certainly achieved a fine story from the rather confused proceedings. I understand, however, that compared with later hearings on another fiber our meeting was run on parliamentary lines.

I like even better your editorial comment, entitled "Where is F.T.C. Going?" on page 85, because it expresses exactly the point of view we have been reaching in the last few weeks. As you perhaps know, the Silk Association of America, Inc., has for many years utilized the services of the Federal Trade Commission in stopping misleading advertising through misuse of the word "silk" and in fact was responsible for the first appeal to the Commission, in 1916, to interpret misbranding as "unfair competition," therefore, within their jurisdiction. Possibly, however, through a feeling of pressure from consumer groups or from a mistaken idea as to industry's attitude on proper labeling, we have found a recent tendency to go beyond the point of preventing misleading information being given to the public. In the case of weighting, we felt definitely that information as to the percentage of weighting without accompanying information on construction, etc., would cause, rather than prevent, the consumer to be misled.

I. L. BLUNT,
Secretary, National Federation of Textiles, Inc.

NEWS OF THE MONTH

Washington Flashes

(From Our Washington Correspondent)

Liberalization of RFC: If Congress enacts the Glass bill providing for a liberalization in the RFC law governing industrial loans, more Government impetus will be put behind such loans than ever before. It is known that the President has been urged to do everything that is necessary to put industry in a position to take up a larger part of unemployment. This bill is seen as a beginning of that effort, and means that hard-pressed textile plants and other industries will have a better chance of borrowing long-term money from RFC for new construction, for plant equipment, and for cutting the cost of production. Apparently the Administration is determined to make a more vigorous effort than was made before to improve business and employment by supplying capital funds.

Wage-Hour Legislation: The wage-hour bill was reported on April 6 by the sub-committee to the House Labor Committee, which set April 12 for its consideration. Chairman Robert Ramspeck, of a labor sub-committee, has tried to draft something the full committee, the President, and organized labor will consider. He has had no luck. William Green, talking through his hat for the same clique in AFL that helped defeat the bill, doesn't want it now. Neither does CIO. And they are not anywhere near an agreement on this issue. The only support is coming from a few high-wage businesses which are being needled by sweat-shop competitors, from the worker victims of the wage chiselers, and from towns which are losing industry to low-standard regions. The new bill would set minimum wages at not less than the weighted-average pay now existing for each craft in industry. A President-appointed five-man board would carry out provisions involving annual advances until a 40c hourly base was reached. This board would also set maximum hours between 40 and 48, and as soon as possible cut down until the objective of 40 hours was reached. No sectional differentials are provided. If this proposal doesn't pass, there will be another drive next Congress.

Processing Tax: The cotton textile industry, Washington hears, is jubilant over refusal of the Senate Finance Committee's declining to consider the Pope amendment to the revenue bill, providing for a processing tax. The predictions of cotton Congressmen that the tax would be enacted this session seem to have been only wishes. But a big section of agriculture does not and did not want this tax. Many believe it would bounce back on produce prices and on the commodity market, both. Of course the proposal can be considered from the Senate floor, but its chances are small. It will come up again next Congress.

Farm Legislation: Farm law amendments, in conference at this writing probably will be passed. The farm law is a mass of complication and there will be more amendments. Unless disputed conservation payments (2¢ or 3¢) are made before the whole law goes into effect this summer they won't do much good.

Modernization in New England

Increasing realization of the importance of modern equipment and methods in competitive industry lies back of an inquiry launched March 21 by the New England Council and the Engineering Societies of New England, as to the fitness of about 2,500 plants, representing 200 industries of the Northeast, to meet their business rivals in other areas on this basis. The inquiry, which is confidential as to names and plant identification, covers production costs as influenced by wage rates, raw material prices, handling costs, maintenance, improved lighting, financing, modernization by depreciation reserves or otherwise, up-to-date control apparatus, obsolete machinery, replacement of outmoded equipment, and improvement programs. The inquiry is headed by Gustavus J. Esselen, for the Engineering Societies of New England, and Richard W. Sulloway, for the New England Council.

"Buy Cottons Now—Save Money—Speed Recovery." The slogans of the above poster set an emphatic selling tempo for this year's observance of National Cotton Week, May 30–June 4, sponsored by the Cotton-Textile Institute, which has in preparation much helpful material to aid merchants in capitalizing the full value of the week.

Series of Style Shows

A series of style shows in the South has started under the auspices of the Cotton-Textile Institute. The first was held at Charlotte, N. C., Apr. 12, in connection with the Home and House Exhibition. The schedule of the others includes: Spartanburg, S. C., Apr. 16, under the sponsorship of Converse College; Greenville, S. C., Apr. 18, under the sponsorship of the Junior Charities of Greenville; Augusta, Ga., Apr. 28, in connection with the American Cotton Manufacturers Association convention; Dallas, Tex., May 7; Memphis, Tenn., May 11, in connection with the Cotton Carnival there. An Atlanta, Ga., date is pending as are engagements in other southern centers. The Delta Chamber of Commerce has set aside May 10 to 15 for promotion of Delta cotton in hosiery with the slogan "Delta Lisle Sets the Nation's Style."

Research Bureau In Philadelphia

The Philadelphia Textile Manufacturers Association has formed a research bureau for the development of a program including enlargement of markets, extension into new products, adjustment of transportation costs, publicity for Philadelphia-made goods, and enlistment of cooperation of local and State authority in support of upbuilding Philadelphia industries. In making the announcement, C. Marlin Bell, general manager, stated that since 1920 about 8,500 looms have gone out of operation in that city.

Exposition Features Memphis Carnival

Cotton products ranging in variety from children's fancy socks to heavy duty automobile tires will be manufactured in full view of the public at the Cotton Textile Exposition to be staged at the Auditorium in connection with the 1938 Memphis Cotton Carnival, May 10 to 14.

Nearly a dozen manufacturers have already signed up for exhibit space and many more are expected to follow, according to Charles A. McElravy, manager of the auditorium and director of the exposition. H. T. Bunn, of Lowenstein's, is chairman of the committee in charge.

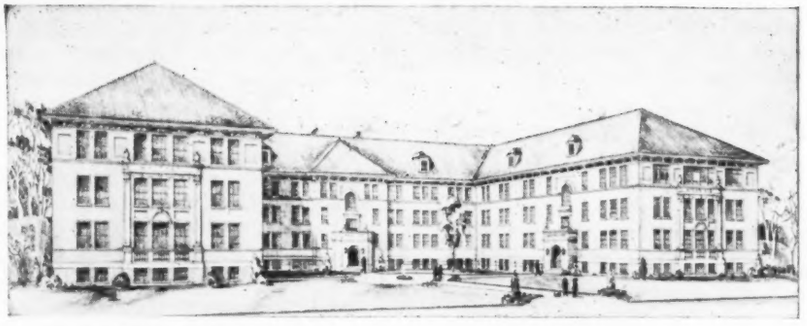
Boycott Held Ineffective

Efforts to boycott Japanese goods have not had much effect, it is indicated by reports reaching Washington. For a few weeks wholesale purchases of Japanese goods were all but suspended. Merchants did not want to place orders until they were sure how the public would react. Purchases now have been resumed at what apparently is the normal rate. Whatever effect the boycott talk may have had on other articles it was demonstrated that the American woman will buy silk stockings regardless of any resentment she may feel toward the producers of the raw material.

With the deflation of the Japanese boycott activity, various silk hosiery firms which had turned to cotton lisle hosiery to meet the temporary demand, have now eliminated that line and returned to their original field. This development, it is pointed out by Dean Hill, secretary of the Durene Association of America, has served to clarify the picture for the mills which are making cotton lisle full-fashioned strictly as a style line, without reference to the boycott. These latter mills total some 20 firms, and they report a growing demand for cotton lisle full-fashioned for informal wear, style and economy being the chief consumer inducements.

Brazil Expects Big Crop

Present indications are that Brazil will harvest a cotton crop of 2,282,000 bales during the 1937-38 season, according to the Department of Agriculture. This would represent an increase of 33% over the 1936-37 crop and an increase of 122% over the average of the five years ended with 1935-36. It is emphasized that this estimate is preliminary and may be substantially reduced if climatic and insect conditions are not favorable.



The new $432,000 Textile Building at Clemson, shown above, is under way and will be completed in September. As the architect's drawing indicates, its floor plan and outside construction are similar to the other college buildings recently erected at Clemson. The Textile Building is 276x60 ft; the wings are 115x60 ft. J. E. Sirrine & Co., Greenville, S. C., are architects and engineers. Considerable new textile equipment will be added when the building is ready.

A. C. M. A. Meeting April 29-30

The annual convention of the American Cotton Manufacturers Association will be held at the Bon Air Hotel, Augusta, Ga., April 29 and 30. Meeting of the board of government will be held April 28.

Worth Street Rules Council

It is understood that there is in process of formation a Worth Street Rules Council composed of members of the 12 organizations which promulgated those rules, which will serve as a medium for the permanent administration of them.

PWA Buying Large

Cotton textiles to the extent of $2,385,018 were bought during the four-year program of PWA from June, 1933, to June, 1937, according to a recent report issued by the Department of Labor.

Report on Cotton Bags

A comprehensive report entitled "Cotton Bags and Other Containers in Flour Mills of the United States Years Ended June 30, 1933 and 1934" has just been issued by the Department of Agriculture. It was prepared by R. J. Cheatham, senior cotton technologist, and John J. Brown, associate cotton technologist.

Hosiery Union Drive Announced

Announcement was made recently that the American Federation of Hosiery Workers would hold its annual meeting May 2 at Charlotte, N. C., the first time the conclave has ever been held South of the Mason-Dixon line. The union states it plans to make the meeting the "springboard for intensification of organization efforts in the South." Southern manufacturers do not believe that the campaign will get very far as the union will have to organize each mill separately in the face of much higher wages than other industries pay in the South.

Cotton Goods Suffer in March

March was a black month for the cotton-textile market. Prices, low at the beginning, weakened slightly toward the close. Print cloth mills in general operated only three days a week, but there are rumors that some of them were on three shifts. Tremendous stocks of gray goods are still on hand, and part of the weekly production is going into stock. Spinners are in better shape from the standpoint of inventory. Bleacheries report a fair volume of business and low stocks of finished goods, which probably is the brightest spot in the entire picture at the present time. Standard 38½-in., 64x60, 5.35 print cloth was asking 4⅝c. at the month's close.

Consumption U. S. Cotton Off 11.7%

Consumption of American-grown cotton during the last half year to Jan. 31 showed a decline of 11.7% in the countries of the world, while

the use of East Indian growths increased 7.9%, according to a recent report by the International Cotton Federation of Manchester.

Move to End Third Shift

The Print Cloth Group met several times recently at Clinton, S. C., in an effort to formulate a program for the voluntary elimination of the third shift. Following the Apr. 1 meeting, officials refused to comment publicly as to progress being made, but it is understood on good authority that the number of mills in agreement at that time was within 3% of the quota necessary for positive action. Optimistic members believe that the few remaining dissenters would be brought into the fold at another meeting scheduled for about the time this issue went to press, but some of the more conservative ones were skeptical that they would be brought in at all—certainly not for two or three months. As far as the immediate present is concerned, the whole issue seems to hang on the flip of a coin with the chances that final decision will not be reached for some weeks yet.

There has been much speculation in Worth Street as to the outcome of the conferences, and it is understood that prominent selling agents have been doing much to encourage the individual mills to cooperate in this movement to eliminate the third shift. If the idea is successfully put across, it will be one of the first really constructive cooperative moves the industry has made in some time. Probable immediate effect would be natural strengthening of prices. Long-time effect would obviously be to stabilize market conditions and check runaway operation when business is on upswing as it should be this fall.

Cotton Report Dates

Release dates for 1938 cotton reports, according to the U. S. Department of Agriculture, will be May 25, July 8, Aug. 8, Sept. 8, Oct. 8, Nov. 8, and Dec. 8.

Fall Men's Wear Out at Reductions

Men's wear worsted suitings have been opened for fall 1938 in important quarters at 40 to 50¢ per yard less than they were a year ago. Declines in lines of overcoatings are reported from 30 to 75¢ per yard. Buyers are taking hold only slowly as caution is still the byword. Barring a definite slump from present basis of raw material and labor, it seems that the new prices are rock bottom and that they permit a reduction of several dollars in retail garment prices. With firmer wool, mills not covered may find competition hard.

Samuel Hird & Sons offered their standard 612 vigoreaux (12–12½ oz.) at $1.32½ base as against the Oct. 25 price of $1.62½ and Sept. 27 price of $1.75. The 23 Athenia, 60/40 rayon blend, 12–12½ oz. is at $1.17½ base against $1.40 and $1.50, respectively.

American Woolen Co. opened Dept. 1 and Dept. 2 worsteds at 32½ to 50¢ less than the revised prices of last fall. Wood 9613, 13–13½ oz., unfinished is at $1.55; Ayer 2843, 12–12½, worsted-rayon blend, $1.12½; Fulton 9078, 14–14½ oz. fancy, $1.67½; Puritan 9200, 14–14½ oz. cheviot, $1.60.

Canada Decides Against Kaufman

The "ringless" hosiery patent held by Charles A. Kaufman was ruled not valid in Canada, in a decision handed down March 22 by Justice MacLean in Exchequer Court, Ottawa. The court sustained action brought by seven Canadian hosiery firms. It was indicated that the decision will be appealed to the Supreme Court of Canada.

Cut Rayon Output

To meet the growing problem of accumulating stocks of viscose rayon yarn, leading producers last month announced they would produce to order only. Demand was light as March opened, but picked up at the beginning of April. The month's volume about equalled February.

American Woolen's Annual Meeting

At the annual meeting of American Woolen Co., Moses Pendleton, president, stated that inventory had been further cut from $22,000,000 as of Dec. 31, 1937, to $18,000,000 as of March 1 and on latter date was as low as it had been in many years.

The company, he stated, was outstanding in its reduction of 34% in inventories last year during a period when practically all industrial companies were expanding in some cases to as high as 200%. The company's raw wool stocks, he said, had been cut from 50,000,000 lbs. at opening of year to 3,000,000 at the close. Retrenchment program was inaugurated Aug. 1. Mr. Pendleton stated, since which time salary pay rolls had been reduced by $614,000, or the equivalent of 15% of the annual pay roll.

Offer Permanently Crimped Staple

Commercial development of an acetate rayon staple fiber having a permanent crimp was announced March 22 by Tennessee Eastman Corp. through its distributors, A. M. Tenney Associates, New York. The company states that the staple is so processed that it retains the crimp permanently, irrespective of stretching or distortion and that the permanence of the crimp gives resiliency to the fabric.

This fiber, known as "Teca," is available in staple lengths from ¾ in. to 9 in. and in sizes of 3, 4, 5, 8, 12, 16 and 20 denier. It is also sold in spun-black. The price has been established at 2¢ above that for the regular acetate staple.

Knit Goods Improve

Knit goods firms welcomed as a happy omen for their Philadelphia conventions this month, the increased volume of business placed during March for April delivery. Hosiery firms in the Pennsylvania area had low inventories and have accelerated output to meet the rising buying trend. The recent advances in prices of low-end full-fashioned lines have served to lower levels generally, but the tone is now more stable. Underwear prices hold steady, with orders slightly higher and production having risen from 40% to approximately 60%. Sweater mills opened fall lines the third week of March, considerably ahead of other years; they reported strong advance interest.

Weak Silk Market

Raw silk weakened throughout March, due mainly to sluggish buying and aggravated at the end of the month by failure of several broadsilk firms; there was scant prospect of early improvement. Crack double extra sold at $1.52½ on March 24 against $1.58 on Mar. 2. Importers hope for pick-up with advent of new crop.

Hosiery Shipments

Hosiery deliveries in February, 1938, were 19.4% above January, 1938, particular strength being shown in women's full-fashioned and women's seamless hosiery, it is reported by the National Association of Hosiery Manufacturers. February shipments totaled 10,108,630 doz. pr. against 8,463,967 doz. pr. in January. Most notable were the February increases in shipments of 46.4% in women's full-fashioned and 34.2% in women's seamless as against January.

Silk Printers Form Corporation

Centralized selling and centralized purchasing of supplies by seven silk and rayon printing companies operating nine plants in the Paterson area have been effected by formation of the Printadye Corp. of America, Inc. The new corporation is affiliated with the Rayon & Silk Printing Association, Inc. Companies included in the new corporation are: Arrow Textile Print Works, Colonial Print Works, Kapo Dyeing & Print Works, Lincoln Print Works, Paramount Print Works, Printex Corp. and Westover Textile Printing Co.

Detecting Oxidation in Wool

Henry A. Rutherford and Milton Harris, research associates of the American Association of Textile Chemists & Colorists at the National Bureau of Standards, Washington, D. C., have developed a new and simple test for the detection of oxidation in wool. The method is based on the ability of oxidized wool to convert a ferrous salt into ferric salt, which in the presence of thiocyanate gives the characteristic red color of ferric thiocyanate. This development is of great practical importance because the susceptibility of wool to deterioration during wet treatments (especially with alkaline reagents) is appreciably increased if the wool has previously been oxidized.

A.A.T.C.C. Notes

Protection of wool materials against moth ravages was discussed by Dr. E. A. Back, of the United States Bureau of Entomology and Plant Quarantine, at a meeting of the New York section of the American Association of Textile Chemists & Colorists held March 25.

Wool Loans Offered

Loans on wool amounting to 15 to 22¢ per lb., grease basis at Boston, have been authorized under the Agricultural Adjustment Act of 1938 and $50,000,000 set aside for the purpose. Loans run 10 months and carry 4% interest. They are said to be for orderly marketing and not price pegging. This announcement was made March 12. There was little evident reaction, but firmness (as compared with February's weakness) had already taken hold of the market. Business during March, however, was still narrow.

In This Issue

COTTON

U.-K. Hearing Brings United Textile Opposition 64
"Violent Upturn" in Cotton Possible, Says W. Ray Bell 67
Labor Productivity Increased by Mechanical Changes . . 68
Higher Drawing-Roll Speeds Produce Better Yarn 76
Staple Cotton Fabrics 78
Crop Control as Applied to Industry 101
Drafts for Binding Fabric . . 110
Napping 110
Georgia Men Discuss Carding and Spinning 111
Cotton Yarn Preparation—Is This the Best Method? . . . 113
Loomfixers' Manual, Cotton—Chap. III 114
Modified Spinning System for Long Fibers 117

WOOL

U.-K. Hearing Brings United Textile Opposition 64
Wool Labeling Rules in FTC Hands 66
Labor Productivity Increased by Mechanical Changes 68
Topmaker and Spinner Must Cooperate for Good Yarn . . 71
Sanford Mills Install Integral-Furnace Boiler 72
Loomfixers' Manual, Wool—Chap. III 115
Modified Spinning System for Long Fibers 117

RAYON AND SILK

Cleanliness in Throwing Doubly Important in Case of Rayon 70
Symposium a Feature of Committee D-13 Meeting . . . 74
Modern Pick-Counters Are Tamper-Proof 100
Embossed Crepe Puckered . . 110
Fuzz on Acetate Fabrics 110

KNITTING

Outerwear Convention Favors Modernizing 1930 Rules . . 77
Textile World's Guide to Knitting Arts Exhibition . . 79
Knitters' Associations Plan Decisive Action on Vital Problems 83
In Search of New Markets, Knitters Try New Uses 86
Production Planning System for Full-Fashioned Hosiery 88
Notes on Fixing Circular Hosiery Machines 92
Needle Counter Aids Yarn Consumption Calculation . . 93
Redyeing Silk Hosiery Requires Extreme Care 94
Sinkers and Verge Plates—An Answer to Mr. Simond 109
Stains on Knitted Rayon . . . 110
Distorted Stitches in Crepe Hose 110
Single Unit Stockings Without Looping 116
Knitting Machine Sinker . . . 117
Knitting-Machine Stop Motion 117

PROCESSING

Finishing Symposium at D-13 Meeting 74
Redyeing Silk Hosiery Requires Extreme Care 94
Lanett Uses Electric Eye to Open Doorway 109
Stains on Knitted Rayon . . . 110
Embossed Crepe Puckered . . 110
Printing Rollers Must Be Handled Carefully 112
Acid Bucket 118
Squeeze Rolls 118
Side-Drive Agitator 119
Raw Stock and Package Dyeing Machine 119

Offers New Flannel

An interesting new fabric, introduced for the first time in the market by Cone Export & Commission Co., is a rayon-cotton flannel. It has an unusually soft, lustrous finish. Two-thirds rayon and one-third cotton, this new fabric is 36-in. wide, sanforized-shrunk. The new fabric is being used for popular-priced night wear, lounging garments, robes, house coats, sports shirts and infants' wear. Price ranges from 27¢ for pastels to 35¢ for deeper colors. White is 24¢.

Carpet Field News

The carpet trade estimates that there is a sufficient stock of carpet wools in this country to carry the industry for the rest of the year, which is of interest since war threats abroad threaten also the carpet wool supply. Prices on wool abroad are reported firm, but carpets in this country are suffering from price cutting to move stocks which may eventually affect prices on goods to be made for future delivery unless broader support develops in the meantime. The Institute of Carpet Manufacturers of America is moving before the end of April to the Empire State Building, 5th Ave. and 34th St., New York.

Wool Tops Move in Narrow Range

The wool top market was much firmer in March than in February although the sharp upswing between the two months was not fully held. Spot tops on the New York exchange were at 83½¢ on March 4, 82¢ on March 11, 81½¢ Mar. 18 to Apr. 5.

TEXTILE WORLD ANALYST

TEXTILE WORLD'S index of textile mill activity for the first two months of 1938 was almost 40% under that for the corresponding period of 1937 — and about 20% below "normal" (1924-31 average). . . . . The approximate extent to which the consumption of the individual fibers declined from that of the corresponding period of last year was: Cotton 35%; wool over 55%; silk 35%; and rayon 40%.

TEXTILE WORLD'S compilation of manufacturing margins in carded cotton fabrics and yarns showed the March average practically unchanged from February in both. (Tables I and II.)

TEXTILE WORLD'S price index numbers for March were unchanged in all series except wool. In that group, the raw material, tops, yarns and cloth all showed declines from February levels.

Textile World's Price Index Numbers

STARTING with January, 1936, TEXTILE WORLD has revised its price index numbers to a 1923-25 base, to correspond with current statistical practices. Figures on cotton manufactures, Aug. 1, 1933 to Jan. 6, 1936 include processing tax.

	Cotton Index Numbers				Wool Index Numbers				Silk Index	Rayon
Date	Cotton	Yarns	Gray	Colored	Wool	Tops	Yarns	Cloth	Raw-Silk	Index
1923-25	100	100	100	100	100	100	100	100	100	100
1930 ave.	50	61	61	72	58	61	72	90	109	46
1931 ave.	32	68	46	59	46	49	59	71	32	32
1932 ave.	24	37	37	60	36	40	52	57	21	28
1933 ave.	39	56	55	50	53	59	62	80	21	26
1934 ave.	61	67	70	62	63	70	75	91	17	25
1935 ave.	60	68	67	69	56	58	70	88	22	24
1936 ave.	45	63	63	68	72	78	76	93	23	25
Jan. 1936	48	67	63	68	67	73	75	93	26	24
Feb. 1936	42	62	58	67	72	81	77	93	24	24
Mar. 1936	42	61	57	66	73	81	77	93	23	24
Apr. 1936	43	60	55	64	68	75	76	90	22	24
May 1936	43	57	54	64	67	75	76	90	21	24
June 1936	44	58	57	65	67	75	76	90	20	25
July 1936	48	61	61	70	69	75	75	90	22	26
Aug. 1936	45	62	63	70	70	75	74	90	23	26
Sept. 1936	45	62	63	70	70	75	74	90	22	26
Oct. 1936	45	64	67	71	71	75	74	92	23	26
Nov. 1936	45	65	74	72	78	82	76	100	26	26
Dec. 1936	48	72	80	74	87	90	84	105	26	26
1937 ave.	42	65	67	74	79	82	85	107	25	27
Jan. 1937	48	73	81	76	90	93	88	108	27	26
Feb. 1937	48	74	78	76	90	92	90	108	27	26
Mar. 1937	53	78	80	78	87	88	90	112	27	26
Apr. 1937	53	80	82	80	84	86	90	112	27	27
May 1937	49	75	76	78	82	84	89	112	24	27
June 1937	47	70	71	78	78	82	88	112	25	27
July 1937	45	65	67	78	78	82	88	112	26	27
Aug. 1937	37	59	62	78	80	82	88	112	25	27
Sept. 1937	33	54	56	73	78	81	87	107	25	27
Oct. 1937	31	51	53	67	73	76	82	100	23	27
Nov. 1937	29	48	50	61	66	68	74	97	22	27
Dec. 1937	30	47	49	60	60	64	70	97	21	27
Jan. 1938	32	47	49	62	57	63	68	97	21	26
Feb. 1938	33	47	50	62	53	60	67	97	22	23
Mar. 1938	33	47	50	62	51	58	66	88	22	23

Key wool prices with usual comparisons follow:

	April 1, 1938	Mar. 1, 1938	April 1, 1937	April 1, 1936
Fine and fine med. territory	$0.63	$0.62	$1.03	$0.85
Ohio ⅜s	.27	.28	.47	.41
Tops fine 64-66s	.88	.88	1.28	1.12
Average ⅜s	.73	.72	1.10	1.01
High ½	.68	.68	1.02	.94
Noils, fine ½	.58	.58	.80	.70
	.45	.45	.60	.55
2-40s 60s wstd yarn.	1.35	1.40	1.83	1.60
2-32s 56s wstd yarn.	1.15	1.20	*	*
8020 serge	1.65	2.00	2.20	1.95

Current statistics on wool consumption and mill activity:

	February (4 weeks)	January (5 weeks)
Wool consumed, clean equiv.		
Apparel wool, lb	12,092,000	12,710,000
Carpet wool, lb	3,984,000	3,670,000
Machinery activity (40-hr. shift)		
Looms (50-in. and wider)	70.0%	67.0%
Carpet looms	43.2%	35.2%
Combs	63.6%	65.7%
Worsted spindles	45.6%	50.5%
Woolen spindles	76.3%	64.3%

Key rayon prices and statistics follow:

Prices	April 1, 1938	Mar. 1, 1938	April 1, 1937	April 1, 1936
Viscose process				
75 denier (18-30 fils.)	$0.77	$0.77	$0.93	$0.90
100 denier (40 fils)	.71	.71	.82	.79
150 denier (40 fils.)	.54	.54	.63	.57
Acetate process				
150 denier	.54	.54	.63	.60
Cupra. process				
150 denier (112 fils.)	.54	.54	.65	.65
Rayon staple, 1½, 3 and 5½ denier viscose	.25	.25	.28	*

Indices of Deliveries*	March	Feb.	Jan.
In year 1938	456	493	374
In year 1937	517	721	737

* Rayon Organon. Covers 100% data for all processes 1923 to date. Note that acetate is now included. Shipments index for all rayon 1923-25 = 100.

Key silk prices and statistics follow:

Prices	April 1, 1938	Mar. 1, 1938	April 1, 1937	April 1, 1936
Crack XX 13/15 wh. 78%	$1.45½	$1.58	$1.99½	$1.88
Tram, 5thd Japan 85%	2.25	2.35	2.81	2.50
Tram, Crack XX 78%	2.17	2.16	2.62	2.37
60s-2, spun silk	3.15	3.15	3.05	2.90

Statistics (bales)	Imports	Approximate deliveries	Stocks at warehouses
March, 1938	27,376	34,884	36,326
February, 1938	25,416	30,260	43,834
January, 1938	29,858	30,715	48,678

Fabric and yarn manufacturing margins follow:

TABLE I. CARDED FABRIC MARGIN

Date	Margin in cents	Date	Margin in cents
August, 1933	21.4	May, 1936	14.3
October, 1933	19.1	June, 1936	15.3
January, 1934	18.4	July, 1936	16.9
April, 1934	17.6	August, 1936	18.0
July, 1934	15.5	September, 1936	18.4
August, 1934	16.6	October, 1936	21.2
September, 1934	18.6	November, 1936	25.4
October, 1934	17.4	December, 1936	28.1
November, 1934	15.8	January, 1937	28.6
December, 1934	16.2	February, 1937	26.2
January, 1935	16.2	March, 1937	25.6
February, 1935	16.0	May, 1937	23.1
March, 1935	15.9	June, 1937	21.2
April, 1935	16.1	July, 1937	20.1
May, 1935	16.0	August, 1937	19.4
June, 1935	16.5	September, 1937	18.1
July, 1935	15.2	October, 1937	17.3
August, 1935	17.1	November, 1937	16.9
September, 1935	17.9	December, 1937	15.7
October, 1935	17.7	February, 1938	16.2
November, 1935	16.4	March, 1938	16.1
December, 1935	16.2	Mar. 9	15.9
January, 1936	17.2	Mar. 16	16.1
February, 1936	16.5	Mar. 23	16.2
March, 1936	15.5	Mar. 30	16.0
April, 1936	14.3		

TABLE II. CARDED YARN MARGIN

Date	Margin in cents	Date	Margin in cents
August, 1933	23.5	June, 1936	14.6
October, 1933	20.0	July, 1936	15.0
January, 1934	18.3	August, 1936	16.5
April, 1934	15.9	September, 1936	16.5
July, 1934	14.6	October, 1936	17.2
August, 1934	15.3	November, 1936	18.0
September, 1934	15.6	December, 1936	20.6
October, 1934	14.6	January, 1937	20.8
November, 1934	13.3	February, 1937	21.2
December, 1934	13.5	March, 1937	21.3
January, 1935	13.5	April, 1937	22.6
February, 1935	13.9	May, 1937	21.2
March, 1935	14.4	June, 1937	19.3
April, 1935	14.1	July, 1937	17.8
May, 1935	13.8	August, 1937	17.2
June, 1935	14.5	September, 1937	16.1
July, 1935	14.3	October, 1937	15.3
August, 1935	15.3	November, 1937	14.7
September, 1935	15.4	December, 1937	13.7
October, 1935	15.8	January, 1938	13.5
November, 1935	16.3	February, 1938	12.9
December, 1935	16.3	March, 1938	12.9
January, 1936	18.4	Mar. 9	12.7
February, 1936	17.5	Mar. 16	12.8
March, 1936	16.3	Mar. 23	13.1
April, 1936	15.6	Mar. 30	12.9
May, 1936	14.8		

Key cotton prices with usual comparisons follow:

	April 1, 1938	Mar. 1, 1938	April 1, 1937	April 1, 1936
Spot Cotton, N. Y.	8.63	9.16	15.17	11.56
Ditto, high previous month	9.27	9.37	15.25	11.72
Ditto, low previous month	8.60	8.51	13.50	11.20
10s hosiery cones	17½	18	33½	23½
10s/2 carded skeins	18½	18	33½	23½
20s/s carded peeler warps	21½	21	38½	26½
60s/2 combed peeler warps	48½	48	69	53½
60s/2 mercerized cones	63	63	79	68½
37 in., 3-yd. drill	6½	6 7/8	11 7/8	8 1/8
38½-in. 64 x 60s	4½	4 7/8	7⅛	5⅛
36-in. 4-yd. 56 x 60s	5½	5 7/8	9½	7⅛
Denim, 2.20s	11	11	16	13

Statistics of particular interest to cotton manufacturers concerning operation and the raw material situation:

	Jan.	Feb.
Spindle activity (% capacity)	93.5	98.9
Spindle activity (millions of hours)	5,682	5,558
Cotton consumed (bales)	434,740	427,528
Cotton exported (bales)	647,481	399,000
Cotton imported (bales)	6,450	18,797

Rayon fabric shipment index reported by the National Rayon Weavers Association and the National Federation of Textiles, follows:

	Feb. '37	Jan. '38	Feb. '38
Taffetas, Twills, Linings, and other Staples	297	135	183
Dress Goods, Novelties and other Fancies	109	56	79
Total	175	82	113

THE OVERSEERS' CORNER

Pete and Bill Return

An absent-minded superintendent gives post-vacation argument

SO MANY LETTERS lately have been written in by Pete and Bill fans asking for their return that the editors chartered a special plane and sent it to Florida to bring the boys back. They are both sun-tanned and have a lot of fish stories to tell. But the vacation is over and they are anxious to get back on the job. And in order to do the best possible job for our readers, they are inviting each person who knows and likes them to send in a suggestion for them to wrangle over in their own inimitable way. The editors are backing them 100% on this and are even willing to pay out some cash money for any ideas which the boys are willing to accept. So let's hear your own particular problem of management!

"WHAT'S gotten into the super lately, Bill?" complained Pete irritably one morning some months after they had returned from their vacation.

"Why nothing so far as I can tell," replied Bill a little puzzled.

"Well I think something's happened to him. I asked him for some new parts six months ago and haven't gotten them yet. And he wants to know why my work is running badly these days!"

"Maybe the mill can't afford new parts right now," ventured Bill. "You know business has been terrible for a long time."

"Yes the mill can," grated Pete. "I happen to know that the store room is half full of these parts. The super just hasn't gotten around to sending them down here yet. He promises, but they never show up. And that's not all! When I want repair work it sometimes takes weeks to get it started. I simply see no excuse for such carelessness."

"Maybe you just don't go about getting what you want in the right way," suggested Bill. "I always get what I want, and promptly too. You haven't antagonized the old boy, have you?"

"Not yet," replied Pete grimly. "But I'm getting good and tired of taking the blame for something that is not my fault."

"Did you ever try putting your requests in writing and keeping a carbon?" asked Bill. "I always do that, and the super knows it too. We never have any arguments. Everything is right there in black and white."

"By gosh, Bill!" exclaimed Pete. "I believe you've got something there. I'm going to do that from now on."

"And another little kink it took me a long time to learn," continued Bill grinning slyly, "is to keep a record of all seconds and lost production after making such a request. The super's a good guy, but just a little absent-minded when he gets caught in a jam."

How would you keep an absent-minded superintendent from passing the buck when his own carelessness is to blame?

Letters from Readers

Endorses Labor Union Article

Editor, Overseers' Corner:

My hat is off both to you and the author of the very timely and practical article, "Labor Unions Not Preferred". This is one of the meatiest discourses on this subject that has come to my attention, and I heartily endorse it. It makes my blood boil when I hear some paid organizer sympathizing with the textile slaves of the South or read the propaganda of some social uplifter. In 99% of the cases these fellows have an axe of their own to grind. The writer has been employed in a southern mill for almost 20 years in a very prosaic job. He has put six children through high school and has kept them decently clothed and with enough to eat. When some meddler attempts to tell me that I am a slave I will tell him where to get off at. In the mill where I am employed every thing that is humanly possible in accord with business principles is done for the comfort and convenience of the employees, and it would be hard to distinguish the employees from the officials by the car they drive or the clothes they wear. And the girls look like a group of school girls on their way to the church or theatre. Instead of being slaves, they are kings and queens in their own right.

—K. M. S.
(*Vinton, Va.*)

Pete and Bill Admirer

Editor, Overseers' Corner:

I too have been missing the breezy chats of Pete and Bill and wondered what had become of them. The editor offers a very plausible alibi for them, but it is hardly ethical to desert a sinking ship. Perhaps if they would get back on the job, they could hatch up some scheme to combat the evil influence of radical agitators who are trying to destroy the textile industry. Now that they have had a good long rest, they ought to be able to start some interesting arguments and perhaps start the rest of us to thinking. So come on back boys and see if you can not devise some plan to start textile merchandise moving and keep the wheels turning. I will appoint myself a committee of one to welcome you back.

G. G. HURD
(*Roanoke, Va.*)

Relatives in Department?

Editor, Overseers' Corner:

Can an overseer run his department successfully, employing his relatives? My answer is no, and my reasons are

CONTRIBUTIONS to "The Overseers' Corner" are paid for without regard to length. We will use letters discussing the material on this page or any other pertinent matter whether of mechanical, managerial or just plain human interest. Those who contribute kinks or practical helps will be paid additional for an appropriate sketch to illustrate their device. It is not necessary to submit finished drawings. If these pages interest you—contribute something to them to interest others. Address Editor, Overseers' Corner, Textile World, 330 West 42d St., New York.

THE OVERSEERS' CORNER

as follows: We will start with the old adage, "Blood is thicker than water." Or, it is only natural for relatives to uphold one another. Overseers are generally in a position to cover up mistakes made by their relatives, and make excuses when necessary. Then we have the relatives who know the overseer's home life and affairs. They more or less blackmail him and are granted favors which other workers are refused. Then we have the overseer who has a son or daughter working for him. The son and the daughter who are living home with the father or overseer are generally privileged characters around the room. The reason for such nepotism is simple enough. Owing to the lack of employment at present, the father figures if he lays his children off or lets them go he will have to support them. So the overseer overlooks or covers up their mistakes for his own, and not the mill's, interest. The employees' reaction is to lose all faith, confidence, and respect for their overseer. And even when the overseer does try to be honest with them they are suspicious. This is a problem that is discussed in many mills, so I hope to read more about it in future editions. H. G. Clarke, Massachusetts

Praises Stonewall School Described in Annual

Editor, Overseers' Corner:

I am writing in reference to the timely article entitled "Help a Boy Come Back" in the Annual Review & Forecast Number of Textile World. It is certainly surprising how an idea can spread and materialize when its originator is possessed of enthusiasm, as is certainly the case with the man or men responsible for the work being contemplated and undertaken in enabling the boys at Stonewall Jackson training school to learn the textile trade. It is surprising too, in the face of the rising tide of crime's increase, that prominent men are so slow to see what really can be accomplished by teaching trades to these boys.

It is lots cheaper to fight crime with the methods outlined at Stonewall than with guns. It is my opinion that most criminals are so, because of neglect, meaning the very young of course, not because they desire to accept this mode of living. Other large cities dare not long remain indifferent to the need of trade schools, if they are sincere in their efforts to rid their precincts of crime. Many youths accept a criminal career only when bewildered at the indifference of the world and their inability to fit anywhere; they are cast adrift on the sea of life. They accept dissipation, more often to escape boredom. A bad boy is more often simply a good boy out of place with his surroundings, and needing tactful help in order to gradually adjust himself. Unhealthy environment, idleness and other cause undoubtedly breed crime. To teach boys the textile trades, those most fascinating and useful of all trades, means that a powerful constructive weapon is in the hands of a community to wipe out crime, and rebuild lost boyhood —replacing the boys' confidence in themselves as respected citizens. A great philosopher once said that the surest way to reform ourselves is to assist in the reformation of others. Life at best even for we who have our work is certainly no Utopia; we too feel the need at times of having someone sincerely interested enough to give us that extra push which will bring out our best traits. How much harder is the outlook of these boys, and how much more do they need the guidance and interest of good men?

There is a saying that danger is an educator that wakes men to vital needs. Here's hoping that America will become more aware of the growing dangers to which we are daily subjected, aware enough to follow in the footsteps of the Jackson training school by aiding the idea in other communities, and cutting down the menace of crime. Those men who have donated their time, services and equipment, etc., for the trade school idea shall always be a source of inspiration to all your intelligent readers.

G. McArdle
(*Philadelphia, Pa.*)

Credit Where It's Due

Editor, Overseers' Corner:

I agree with M. A. J. in a recent issue of Textile World. If you are a straight shooter, you should give your assistants all the credit that belongs to them, and they should get paid according to their ability. Anytime a second hand comes up with a good idea, it is the duty of the overseer to report it to the superintendent and to explain that it not his idea but the second hand's. Although we know there are some overseers who think they know the job from A to Z and will not listen to their assistants, others are afraid to let the superintendent know that the second hand's brains and not his run the room. When some overseers see that their assistants are good workers, full of ambition, and likely to get ahead, they will try everything in their power to cripple the assistant's ambitions. Of course nobody is perfect, but still there are a few straight shooters who give their assistants a chance.

J. C.
(*Rhode Island*)

Textile Broadcasts

Editor, Overseers' Corner:

In the January, 1938, number of Textile World under an article on fiber identification I noticed your reference to a "coast-to-coast broadcast over the NBC network." You state the nature of the broadcast, etc., and tell me just enough to make me wish I'd heard it. Had I known of it before it would have been an easily satisfied wish.

My suggestion is this: You know well in advance when such constructive programs will be on the air. Why not pass this on to those of us who would like to hear them? I would suggest further that since the time element enters publication that a card like the subscription cards be placed between the pages a day or so before mailing carrying information on broadcasts.

We overseers are entirely dependent upon those of experience for our new trends and knowledge of what to expect. This would be a real service, and I know many of us would delight in hearing those leaders in our field who "set the pace." John W. Miller,
(*West Virginia*)

Reply: We regret at the present time it is not feasible to give any substantial information in advance concerning such broadcasts, as many of them—particularly those with a news tie-up—are arranged at the last minute and consequently no announcement could appear in a previous issue of Textile World. However, in many instances it is possible to secure scripts of broadcasts after they are given, and any one interested in textile broadcasts might write directly to the studios or to persons giving the broadcast and inquire for a copy.

THE OVERSEERS' CORNER

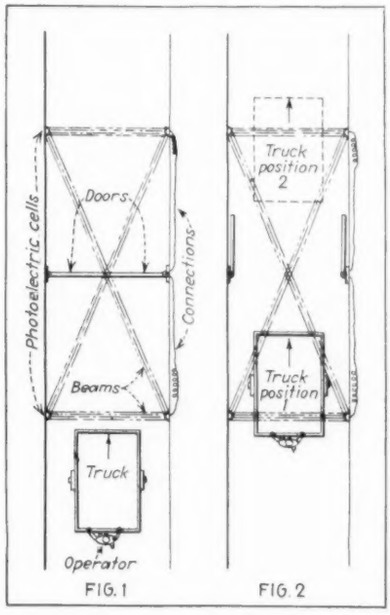
Overseers' Practical Helps

Lanett Uses Electric Eye To Open Doorway

ABOUT A YEAR ago TEXTILE WORLD published a short article in this department describing a number of ingenious gadgets which the master mechanic and supervisors have worked out in the shop at Lanett Mill, Ala. During another visit there not long ago the southern editor noticed an arrangement which is tops in something or other.

Formerly, the mill had difficulty with traffic jams and collisions of trucks being pushed back and forth between two departments through a bottleneck passageway. The passageway is several yards long and divided in the middle by swinging doors, necessary because of differences in manufacturing conditions in the two rooms. These doors obscured vision and were a nuisance to open and close.

The problem was finally solved by installation of "electric eyes" or photo-electric cells and mechanism to automatically open and close the doors. The arrangement is such that there is a cross beam of light at each side of the door, which opens it, and diagonal beams, which keep it open until both truck and operator are safely through. The first beams are far enough away from the door so as to open it in plenty of time for the operator to see any one on the other side.

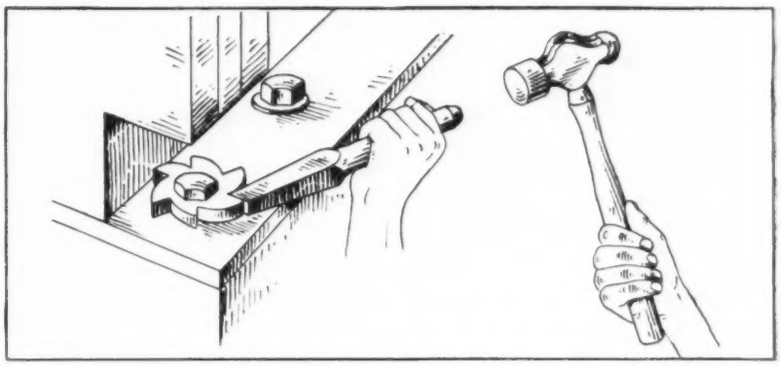


Doors closed (Fig. 1) with truck approaching beam. Doors swing open automatically (Fig. 2) when first beam is broken and remain open as long as diagonal beams are obstructed.

Star Wrench for Stubborn Nuts

ONE OF THE GREAT difficulties of taking apart machinery in overhauling work is the removal of stubborn or, as machinists call them, frozen nuts. Well, the writer has overcome this difficulty by making up from plate steel disks a set of standard sizes of what he calls "star drift wrenches". Any handy maintenance man can make himself a set, for use as shown in the sketch. They can be used in places where it is difficult to get an ordinary wrench, either to tighten rigidly or to loosen nuts, by simply turning the disk over to suit the direction of the drift blow on the notch. Be sure to make the wrenches of a good grade of steel and temper them so they will not be brittle or soft.

C. H. W.
(*Penacook, N. H.*)



Star drift wrench in position for tightening nut; to loosen, turn wrench over

Sinkers and Verge Plates— An Answer to Mr. Simond

I WISH TO THANK Mr. Simond, of New Hampshire, for his evident interest in my article, "Kill The Hosiery Stripe" (TEXTILE WORLD, *April 1937 issue*). Apparently he read it well and looked for possible flaws. None of us is perfect or above criticism and after giving careful thought to what he wrote in the November issue of TEXTILE WORLD, there are some points I wish to clear up. If he will read again my paragraph on slur-cock setting he will note that I advocated the distance of one divider between the sinkers and verge plate, although I failed to stipulate that each gage should be set with that gage divider.

Now then, the reason for this setting is to get the best fabric possible as far as the slur-cocks and sinkers are concerned, is it not? It is quite true that sinkers driven right to the verge plate would be ideal except for the fact that the wear on the verge plates would be too extreme. The reason we obtain better merchandise by this method is that *every* sinker must travel the same distance, because the verge plate itself would stop one sinker from coming further forward than the next, unless the parts are worn beyond the point of further usefulness. When we have too much play, some sinkers fail to complete the required length of their stroke; hence we have a stocking that contains stripes. If some of the sinkers did not move sluggishly when there is too much play, we would not have bad fabric; it would not be necessary to use one divider as a standard. It is not my intention to imply the sinkers would move so sluggishly they would be visible to the human eye, but when we have too much play it is readily understood there is a chance of one sinker being driven further forward than the next. Regardless of the distance any object or objects must travel, or the rate of speed at which they cover this distance, if each and every one does not complete the desired length of its possible stroke, the one that lags is sluggish.

It is also granted that filing or packing needle-bar hinges has a

THE OVERSEERS' CORNER

tendency to throw the needles at a wrong angle, but it is too slight to make any great amount of difference in the running of the machine. This writer has observed numerous fixers and finishers, good men who are considered capable and know their business well, either file or pack a needle-bar when the occasion arises.

Perhaps the grinding of verge plates is the best method of renewing the straight edge, but when they are too worn it might be more advisable to send them to the machine company or replace them with new ones. There are very few hosiery mills equipped to grind verge plates, but a man with a little patience can do a passable job with a file, Prussian blue and a straightedge. Of course a jig must be made so the verge plate can be screwed down in the same position it occupies when on the machine.

C. O. Simms,
(*Tennessee*)

Questions and Answers

Stains on Knitted Rayon

Technical Editor:

We inclose herewith a small sample piece of fabric made from 150-denier rayon. On examining this fabric, you will notice stains at intermittent distances. We shall appreciate it if you can offer us any explanation as to the cause of these stains. (8461)

We find that this fabric is knit with eight feeds of yarn going onto the knitting machine. One of the cones of this feed has evidently been exposed to the light in such a way that the coning oil or lubricant used on the yarn has become oxidized and stained in portions. When knit into the fabric and subsequently boiled off, bleached, and dyed, the oxidized stain of the yarn making up this course has not been completely removed. As a result, it does not take the dye uniformly and, therefore, produces this brown stain. The stain occurs only in one of the feeds.

Distorted Stitches in Crepe Hose

Technical Editor:

Inclosed is a crepe stocking; you will notice a pin hole or a deformed stitch right after the flare narrowing. Kindly give us your opinion as to these holes, as we find them quite numerous in crepe stockings. (8479)

The distorted stitch exhibited by the sample submitted is nothing more than an extra long loop. We believe that this loop was caused by a kink in the yarn being knit into the fabric at the point of the distorted stitch, the kink remaining in the kinked condition until the stocking reached the dyeing or boarding process. At that time it was unkinked by the process and the affected stitch was left with a surplus amount of slack thread.

There are so many things that can cause holes in knitting crepe yarn that it is thoroughly possible that you are having trouble different from this particular exhibit; but we are not in a position to give further advice, as only this one hole was in evidence in your sample. Therefore, in this instance, we can suggest only that you carefully check up on your kinking trouble in the manner outlined above, although we might further suggest that a reasonably balanced twist be employed in the production of crepe hosiery, with always a little less twist in the reverse or finished twist than in the ply.

Drafts for Binding Fabric

Technical Editor:

Inclosed is a sample of combination binding. I should like to obtain the harness draft and reeding plan on the same. (8531)

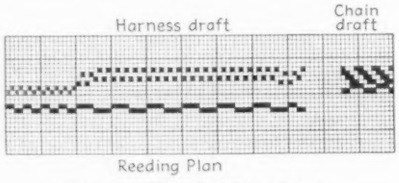


Fig. 1. Shoe binding fabric

Harness and chain drafts, and reeding plan for this shoe binding are as shown in Fig. 1.

Embossed Crepe Puckered

Technical Editor:

Inclosed are two samples of acetate-rayon crepe—one in the gray and partly embossed, and the other finished. Kindly advise as to who, in your opinion, is to blame for the puckered condition near the selvage—the mill or the dyer. More specifically, just what caused the pucker? (8466)

It is possible that the mill and the dyer are about equally responsible for this condition. There are so many potential causes for this defect that it would be next to impossible to describe each in detail; but the lack of properly balanced tension in weaving is a common cause, as is also stretching of the fabric in processing.

We suggest that you try another dyer and examine the results to see if this condition is eliminated. At the same time we recommend to the mill that it examine its warping department for ends binding or dragging and watch the fabric in weaving from an angle, since sometimes, when this defect is caused during weaving, it can be detected in that manner.

Napping

Technical Editor:

Kindly advise me what is meant by "tucking" when applied to napping of cotton or woolen goods? Does it require any special type of napper? Our machine is a double-acting cotton-type napper with two sets of 3-in. rolls, ten rolls working in one direction and ten in the opposite direction. (8505)

"Tucking in" means nothing more than turning the nap under after it has been raised sufficiently. The counterpile is used to tuck or turn under the nap that has been raised. This makes the fabric look quite heavy and bulky, gives a full handle to the cloth. It also is used many times to hide the construction on flimsy fabrics.

Fuzz on Acetate Fabrics

Technical Editor:

I am inclosing herewith four samples of fabrics—two in the gray, and two finished. You will note that in the finished fabric there is a pronounced fuzz on the satin stripes. Will you kindly advise me as to the cause of this defect and the precaution which I should take, in processing the goods, to avoid it. (8452)

The fabrics in question apparently are piece-dyed acetates with a rayon satin-effect stripe. The fuzz is caused by chafing of the goods somewhere in the processing. The cloth seems to have been dyed in the rope form, double width, and cut into two narrower widths after finishing. The steps to be taken to prevent the chafing depend almost entirely on the machinery available. If you have a singeing machine, the cheapest way of getting rid of the offending fuzz

THE OVERSEERS' CORNER

is to singe the cloth just before the size is applied in the finishing process. If no singeing machine is available, the cloth should be faced before dyeing; that is, the fabric should be doubled selvage to selvage—face in—and stitched loosely every 18 to 24 in. These stitches can be made either by hand or with a tacking machine. If the goods are boiled off in the dyebox, the cloth should be faced while it is still in the gray.

Georgia Operating Executives

Discuss carding and spinning at Atlanta

OVER 300 Georgia and Alabama operating executives, with a smattering from other southern States, took part in the carding and spinning meeting held March 19, at Georgia School of Technology, Atlanta, Ga. A. D. Elliott, superintendent of Trion (Ga.) Co., presided as general chairman. The carding discussion was led by George E. Glenn, of Pepperell Mfg. Co., Lindale. R. P. Sweeny, superintendent of Exposition Cotton Mills, Atlanta, was in charge of the spinning phase of the meeting. Ervin Lehmann, of Langdale, Ala., was elected to the executive committee to succeed C. K. Cobb, of Canton, Ga., whose term had expired.

Carding Session

Opening the carding discussion, Mr. Glenn asked for a description of opening-room layouts. Mr. Duckett, of Fulton Bag & Cotton Mills, Atlanta, said that his plant feeds off ten bales into the hopper. Machinery includes a vertical opener, a fan, and a Centrif-air machine. The opener has grid bars. At Trion Co., a 12-ft. apron feeds the cotton to a bale breaker. A Buckley beater operates at 700 r.p.m., the vertical opener at 765 r.p.m., and the Centrif-air machine at 350 r.p.m. The cotton goes from a Gyrator to the hopper of the picker. Production is 1,100 lb. per hour.

Consensus was that it is possible to reduce production in the picker room and thereby improve yarn quality. Percentage of waste removed by opening and picking equipment and by cards, it was agreed, is entirely dependent on local conditions. A number of the men reported from 2 to 3% waste removed by the first two processes and 5 to 6% by the cards. Fly in the card room can be reduced by careful regulation of the cards themselves, by the use of oil, and by special attention to ventilation.

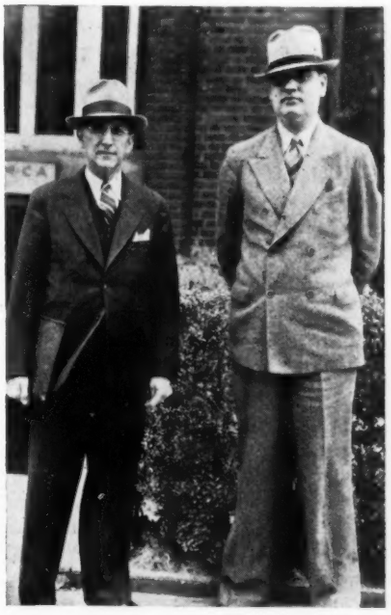
V. J. Thompson, of Rushton Cotton Mills, Rushton, Ga., reported that flats can be kept from loading up by careful attention to the back-plate, grade of cotton, condition of front brushes, condition of wire, and other factors.

With reference to long-draft roving, Pepperell Mfg. Co. has a number of these frames in operation and reported that they are working out successfully, despite slightly lower breaking strength. This mill is making 1.00 hank roving from 66-grain sliver with a draft of 8, and 1.40 hank roving with a draft of 10. There has been considerable reduction in labor cost at Lindale since going on 2.67 hank roving from a 65-grain sliver drafted at 20.8. William Belden, manager of Clark Thread Co., Austell, reported a saving of 30% in making thread from 1⅛- to 1½-in. cotton using the long-draft roving equipment. Efficiency is 85%, and draft is 35.

Koroseal rolls were agreed almost unanimously to be satisfactory for spinning. The chief objection is excessive eyebrows, according to some. Mr. Gibson, of Martha Mills, Thomaston, remarked that he has heard of a new roll to be put on the market soon which will completely eliminate eyebrow trouble. All four lines of steel rolls at Martha have been replaced with Koroseal. No one reported any fluting in connection with the new rolls.

Spinning Discussion

Mr. Sweeny opened the spinning forum by asking for reports on use of light-weight spinning tapes. A number of mills described distinct power savings, ranging up to 15%, as



R. P. Sweeny (left), superintendent of Exposition Cotton Mills, Atlanta, who led the spinning discussion, and George E. Glenn of Pepperell Mfg. Co., Lindale, Ga., who led the carding discussion.

A few of the Georgia and Alabama operating executives who attended the Atlanta meeting.

THE OVERSEERS' CORNER

a result of the new tapes. Spindle speeds were declared to be increased from 1 to 2%, and production a corresponding amount. The most popular tape was said to be 0.031-in. thick, and no one reported undue stretch. Original cost was said to be about four times as great as for the thick tapes. No conclusive test was reported as to the comparable life of the different types. A number of methods for sewing ends were offered, with several members advocating a 4-in. overlap with opposite diagonal cuts on the ends.

Opinion was divided as to the advisability of washing out bolster bases with a cleansing agent. Those who make a practice of cleaning out the bases largely favored kerosene. Others asserted that kerosene causes the bases to wear out more quickly than necessary. Mr. Frimm, of Muscogee Mfg. Co., Columbus, advocated a bolster lubricant composed of about four parts spindle oil to one part lard oil.

Several of the members offered detailed cleaning schedules for long-draft machinery. Mr. Glass, of Muscogee Mfg. Co., offered a typical program for 8s to 20s yarn as follows: inside base rail one time in 80 hr., outside base rail four times in 8 hr., ring rail one time in 8 hr. separator one time in 8 hr., thread board one time in 8 hr., back three times in 8 hr., roll stands one time in 8 hr., roll creel one time in 8 hr., front scavenger at the doff, back scavenger one time in 80 hr., stationary top clearer one time in 2 hr., steel rolls one time in 80 hr., roll stand one time in 8 hr.; other parts one time in 80 hr.—choke under whirl, choke off idler, roll weights, idler weights, revolving top clearer, and roving guide.

Spinners' time was reported to be allocated as follows: (1) 15% putting up ends, 17% creeling, 53% cleaning, 15% warping; (2) 60% creeling and putting up ends, 40% cleaning; (3) 36% putting up ends, 15% creeling, 49% cleaning.

A. S. Thomas, of Opelika, Ala., reported that an $1,800 cooling system in his spinning room lowers the temperature 10° F. in the summer months and maintains relative humidity at 60%. There are three ducts across the frames, which draw in air from the cool side of the mill by means of one 1,200-cu.ft. fan and two 8,000-cu.ft. fans. The ducts taper from 46-in. to 28-in., with 6 x 9-in. openings. Air is changed every 5 min.

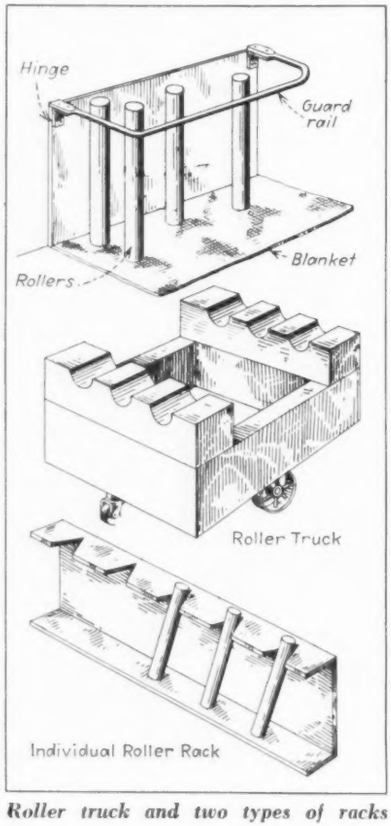
Printing Rollers

Must be handled with care to prevent damage to the engravings

By WILLIAM PAZ BRUNSON

ENGRAVED copper rollers for textile printing are very delicate—and very heavy. Since engraving is a costly process, each accident or damage to a roller is expensive. Therefore, the warning "Handle With Care" must be heeded. The weight of the rollers adds to the difficulty of the problem.

Some plants have engraving shops of their own, while others have their rollers engraved at a job shop. Considering first the job shops, the question of shipping naturally arises. To prepare a roller for shipment it should first be wrapped in paper. This will offer some protection to the roller, but in addition it will enable the recipient to detect any damage that may occur in transit. The roller should then be wrapped with several thicknesses of cloth. No loosely woven, coarse cloth, such as burlap, should be used, as it tends to pick up grit and hold it. After the roller has been wrapped it should be placed in a shipping box as near the size of the roller as possible. A piece of backgray or other suitable cloth can be rolled up rope-fashion and wrapped around the roller at each end and the middle to keep it from bouncing.



Roller truck and two types of racks

Many intricate and expensive roller boxes have been designed. However, a simple and cheap roller box can be made of ½-in. pine with 1-in. ends. The box is rectangular in shape and nailed together. After the roller has been placed in the box, place the lid on and nail it at the ends only, so as to minimize the possibility of a nail sticking through on the inside to damage the roller. Straps or wire should be placed near each end and in the center, as the nails at the end are insufficient to hold the lid on the box. If the engraver is not already using the method described above, he should be requested to do so.

After the roller has been received, it is either taken to the roller room for storage or put in the printing machine. Assuming that the roller is to be used immediately, it is taken out of the shipping box and sent to the jack. It is necessary at times to use shims or "shirts" around the mandrel to increase its size and give a tight fit. Paper, very thin copper sheets, string, cloth, and other materials are used to shim the mandrel. When a mandrel is too large, the only remedy is the use of another mandrel which is slightly smaller. Since copper has practically no packing qualities, any irregularities in the bore of the roller, improperly placed shims, or crooked mandrels will be transmitted to the printing surface of the roller when pressure is applied to the mandrel by a hydraulic (or hand) jack. Therefore, it is extremely important to have mandrels free from rust, old color, or any other foreign matter. Constant checking of the mandrels for trueness saves many rollers.

The rollers are moved within the plant by means of a roller truck. This truck usually is made of 4 x 4 in. timbers hollowed partially to fit sev-

THE OVERSEERS' CORNER

eral rollers and mounted on wheels. The grooves should be well padded. Old printing machine or Palmer blankets make excellent permanent pads. The permanent pads should be covered with several layers of cloth, which should be changed frequently. A roller truck must never be overloaded by pyramiding rollers on top of one another, regardless of the padding between them.

After a roller leaves the printing machine it is naturally very dirty. Dried color on the ends and a certain amount of water and color seep inside of it. Frequently the color has not been thoroughly washed out of the engraving. The roller should be placed in a vat of clean hot water and allowed to soak for 15 or 20 min. Then it is taken out of the bath and thoroughly rubbed with a clean, oily rag inside and out so that a film of oil is left on the surfaces. The roller is then ready to be placed in the roller room.

The arrangement of the roller room depends upon the available floor space. Some plants store the rollers in individual racks arranged in tiers, while others keep them at floor level. Probably the safest arrangement is to store them in notched racks at floor level, placing the racks so that the rollers tilt backwards at an angle of about 20°. However, this method requires a great deal of floor space and, for that reason, is seldom used. Obviously, there is less danger of damaging the rollers if they are all at floor level; consequently a modified arrangement of the foregoing plan is sometimes used. A rack is built with no bottom, but an arm extends outward slightly farther than the space necessary for two or three rollers standing on end. The rollers should be protected from the floor, and again discarded printing machine or Palmer blankets can be put to use. In this arrangement there is always the danger of knocking over one roller and damaging several others. Therefore the roller room should be locked if possible, and no one allowed inside except the trained men who handle the rollers.

Regardless of the methods used for storing and handling rollers, the success depends entirely upon the training of the men. Consequently the most important thing in the care and handling of rollers is the thorough training of the men who actually do the work. These men should always be hand-picked and intelligently supervised.

Cotton Yarn Preparation . . .

Is this the best method?

A TYPICAL yarn preparation chart for high-count 2 x 1 combed broadcloth, as made in a large fine goods mill, is reproduced on this page. Cloth construction is 37½ in., 108x60—3.85. The manufacturers believe this is the best method of producing such yarns, but do you? Criticism of the program is invited, and TEXTILE WORLD will be glad to receive comments from the readers, telling what is good and bad about the set-up.

The mill making yarns of this type is interested primarily in quality. Evenness is good, and breaking strength averages 31 lb. for the 46s and 36 lb. for the 58s. Cotton used is 1 1/16-in. (50% strict low, 50% middling) for filling; 1 3/32-in. middling for warp. Machinery is in good condition. Regular spinning is used, rather than long draft, and four processes are maintained between carding and drawing. The mill also spins warp and filling down to 20s from the 6.00 hank roving produced by the fly frames.

How would you make this yarn to give the highest quality and lowest cost possible?

The chart appears below.

Yarn Preparation for 2 x 1 Broadcloth

	Filling	*Warp*
Pickers	12 oz. lap 5.00 draft	12 oz. lap 5.00 draft
Cards	43 grain sliver 113.55 draft 7% waste	43 grain sliver 113.55 draft 7% waste
Sliver Lapper	510 grain lap 1.69 draft	510 grain lap 1.69 draft
Ribbon Lapper	440 grain lap 4.64 draft	440 grain lap 4.64 draft
Comber	50 grain sliver 61.95 draft 12% waste	50 grain sliver 61.95 draft 12% waste
1st Drawing	55 grain sliver 5.45 draft 223 r.p.m. front roll speed	55 grain sliver 5.45 draft 223 r.p.m. front roll speed
2nd Drawing	59 grain sliver 5.59 draft 230 r.p.m. front roll speed	59 grain sliver 5.59 draft 230 r.p.m. front roll speed
Slubbers	0.50 hank roving 3.54 draft 147 r.p.m. front roll speed 0.954 twist multiple	0.50 hank roving 3.54 draft 147 r.p.m. front roll speed 0.954 twist multiple
Intermediates	1.64 hank roving 6.56 draft 152 r.p.m. front roll speed 0.93 twist multiple	1.64 hank roving 6.56 draft 152 r.p.m. front roll speed 0.93 twist multiple
Fine Frames	6.00 hank roving 7.31 draft 96 r.p.m. front roll speed 1.19 twist multiple	6.00 hank roving 7.31 draft 96 r.p.m. front roll speed 1.19 twist multiple
Spinning	46s yarn number 15 draft 123 r.p.m. front roll speed 8600 r.p.m. spindle speed 3.00 twist multiple 7¼-in. quill	58s yarn number 19.25 draft 94 r.p.m. front roll speed 8800 r.p.m. spindle speed 3.25 twist multiple
Spooling or Doubling		Spooling or doubling for twisting is optional, depending on mill's equipment. Spooling amounts to 3 to 5% of cost; doubling to 12 to 15% of cost.
Twisting		Dry twisting 58/2 yarn number 130 r.p.m. front roll speed 8200 r.p.m. spindle speed 3.25 and 2.50 twist multiple
Spooling		Optional
Warping		Speeds depend on equipment

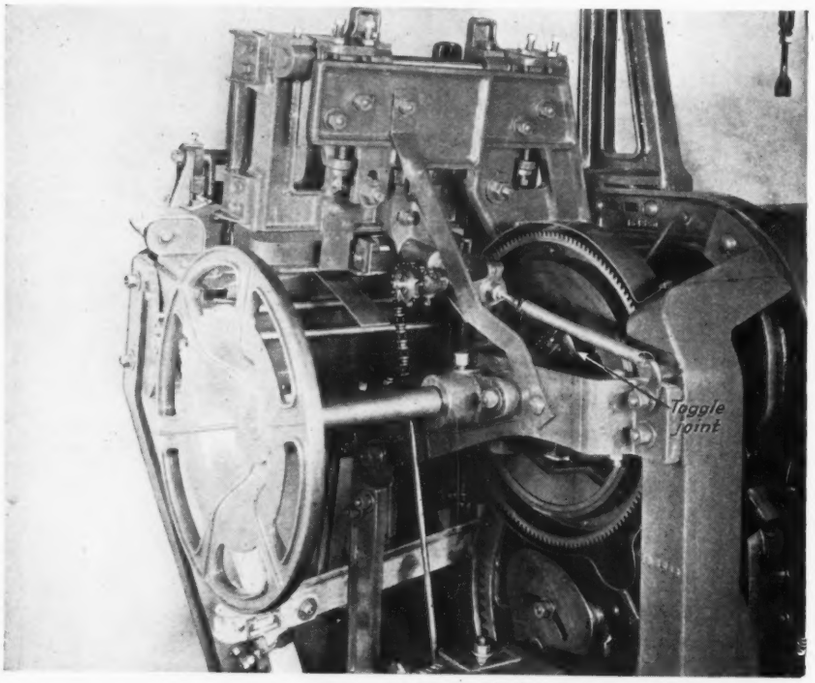
LOOMFIXERS' MANUAL

COTTON SECTION—*Chapter III (Continued)*

By IVAR MOBERG

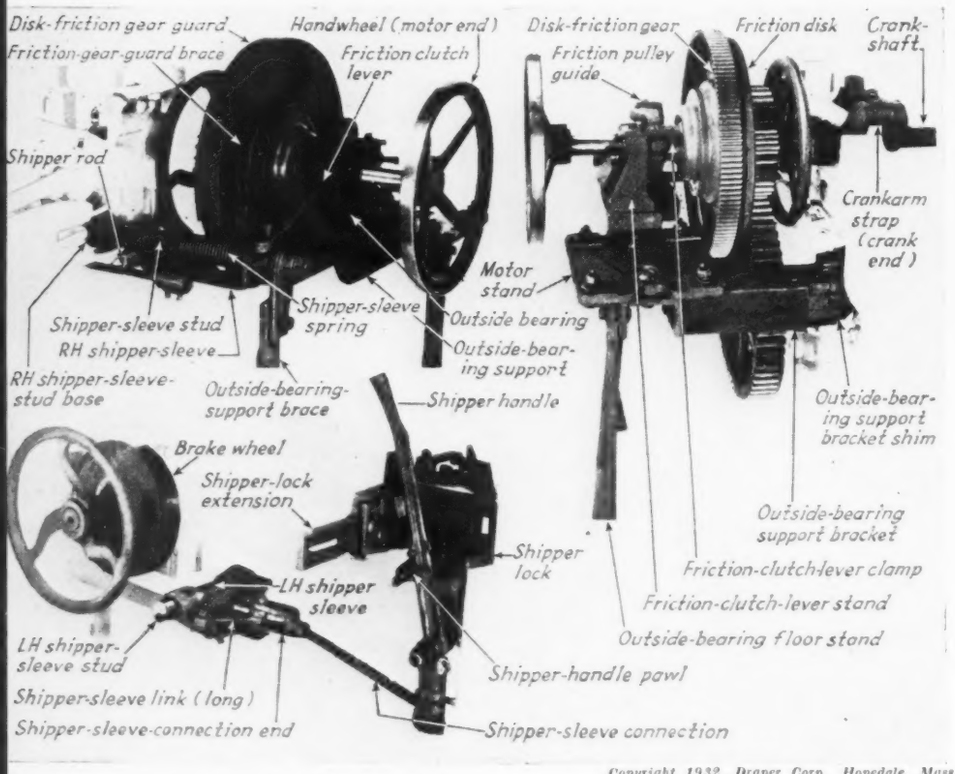
Loom Driving and Braking Motions

CONTINUING our discussion of loom-drives, we come now to another Draper loom arrangement with easy shipper for a disk-friction motor drive. This is shown in Fig. C21. The setting of this motion is similar to that described last month, with the exception of the shipper sleeve connection. This is a toggle-joint arrangement, and all that is necessary is to adjust the length of the sleeve connection so that the shipper-sleeve links will be in a straight line, or perhaps a trifle beyond, with the shipper handle in the "on" position. If this sleeve connection is too short to move the sleeve links to the proper position, the jar of the loom will have a tendency to knock off the shipper handle at intervals. If the sleeve connection is too long, so that it moves the sleeve links too far beyond a straight line, it may happen that neither the warp stop-motion, the filling stop-motion, nor the protection motion will be able to force the shipper handle into the "off" position. Once adjusted to proper length, the sleeve connection should never be touched for friction adjustments.



Courtesy Crompton & Knowles Loom Works

Fig. C22—C. & K. friction clutch for motor drive on heavy looms



Copyright 1932, Draper Corp., Hopedale, Mass.

Fig. C21—Draper disk friction drive and easy shipper, arranged for motor

Fig. C22 shows a C. & K. friction clutch for motor drive on very heavy looms. This clutch is of the internal-expanding type and is very powerful if correctly adjusted. The friction blocks are forced to expand against the internal friction pulley by means of two toggle joints, one of which can be seen in the illustration just below the upper friction block. To adjust the friction, proceed as follows:

Step 1. Adjust the length of the sleeve connection until this forces the toggle joints in straight vertical position when the shipper handle is in the "on" position. At this point the adjusting screws in the friction-block levers, which connect with the toggle joints, should be screwed well in, so the blocks will not be forced against the internal pulley. It is of paramount importance that the toggle joints have a straight-line position when the shipper handle is on, other-

wise there will be a heavy end-thrust on the shaft, and the power of the clutch will be reduced through decrease of leverage. After the sleeve connection is adjusted to the proper length it must not again be touched for friction adjustments, except to take up wear of the shipper motion.

Step 2. Screw out the adjusting screws, a little at a time, until the friction block is forced up against the internal friction pulley. Insert two strips of ordinary writing paper, not cardboard, between the friction blocks and the internal friction pulley. Then pull the handle very slowly into the "on" position. The friction should be adjusted by turning the adjusting screws so that the two strips of paper will be locked at exactly the same time by the pressure of the friction block. The friction of the two blocks is now equalized but may still be either excessive or insufficient.

Step. 3. Remove the two strips of paper, pull the handle into the "on" position, to which it should go without undue force. If the force required to pull the handle into proper position is excessive, loosen each adjusting screw ¼ turn and try the handle again. Repeat this, if necessary, until the handle can be pulled into the "on" position with only moderate force.

Step 4. Start the motor and pull the shipper handle into the "on" position. Turn the adjusting screws a like amount out or in, as the case may be, until the friction is barely sufficient to stop the motor. Release the friction immediately when the motor stops, or a fuse may be blown When making this test, put a wooden block between the lay and the front portion of the loom frame at both sides, to prevent the loom from turning over. In making any friction adjustment after the friction has once been equalized, each adjusting screw must be turned a like amount, or the equalization of the friction will be disturbed.

WOOL SECTION—*Chapter III (Continued)*

By BENJAMIN F. HAYES

Head Motions

HARNESS-STRAP sheaves are often-neglected loom parts. This is due, probably, to a lack of understanding of the importance of their function, since any loomfixer will find himself well repaid for his labor in getting and keeping these sheaves in proper operating condition. In the first place, it is essential that harness-strap sheaves be kept well oiled, since this is of great assistance in relieving the head motion of undue strain. Special attention should be given to those sheaves under the center of the loom, as they are under more stress than the others.

Badly neglected sheaves often cut into their bearings to such an extent that the sheaves pull at an angle, rather than riding straight. This, in turn, tends to wear out harness straps quickly, since they ride on the edges, rather than in the grooves, of out-of-true sheaves. Further, sheaves which are out of line will bind against one another. This puts extra strain on the head motion, and oftentimes will result in the lock-knife cam not holding the lock knife firmly in position while harness cylinders form a shed.

Commonly, in such cases, loomfixers place an extra spring on the lock-knife finger. This appears to remedy the defect, but actually, excessive spring may cause either the lock-knife finger or the lock-knife cam to wear out much more quickly than would be normal.

Obviously, there must be some merit to this practice of putting extra spring on lock-knife fingers, since so many mills and loomfixers indulge in it. But a much better procedure is to accord harness-strap sheaves proper care; remove old springs which have lost their pulling power and replace them with new, live springs; and remedy at their sources defects which appear, rather than making makeshift repairs which may, in the long run, do more harm than good.

Pattern Chains

Pattern chains are likewise important head-motion parts. Yet, like harness-strap sheaves, they are often neglected or used for so long a time they can no longer render efficient service. In one week enough can be lost, on cloth damaged by use of worn-out pattern chains, to more than pay the entire cost of equipping an entire mill with new pattern chains.

If pattern chains are twenty or more years old, there is bound to be considerable lost space in some of the bars, caused by ordinary wear and tear. It may be that such wear amounts to as little as 0.001 in. on a single unit, but when there are twenty or more sections to a pattern chain, the amount lost by wear is multiplied to a dangerous extent.

Some mills have special links to be placed on pattern chains that are worn; others use wire staples for taking up wear; still others merely have fixers tie strings on worn bars to take up the slack. When pattern chains are either tied up with string or filled in with wire staples, very often risers are forced out of line with vibrator runs. Since these runs are designed to be centered by the risers of pattern chains, risers which are not in line may become broken—perhaps only a small part off one edge, but even this little can allow a vibrator to drop when it should not. This, of course, will cause harness skips and since, sometimes, weavers cannot see these skips, entire cuts of cloth may be damaged to such an extent that they are not worth the value of the yarn contained in them.

Unless such duties are delegated to other operatives, fixers should carefully examine the pattern chain on each warp started. And even when others have the responsibility for checking chains, very often they look only for inaccuracies in the pattern, rather than for the imperfections noted above. It is, therefore, good practice for fixers to try every chain in both directions before the loom is run.

Chain Length Important

Another important item concerning pattern chains is the number of bars used. The best pattern chain ever placed on a loom is a six-bar chain. It is impossible for such a chain ever to become caught, unless the chain itself breaks.

Often eight-bar chains are used and they very frequently become caught. It is the writer's opinion more damage has been done to head motions, more work for loomfixers caused, and more money wasted by use of eight-bar chains than by any other single item. Yet they are still sometimes used, both for pattern and box chains. If, due to the particular pattern in question, it is not possible to use a six-bar chain, at least twelve bars should be used. For instance, if a pattern is complete on four bars, the chain should contain at least three repeats of the pattern, or twelve bars. As a matter of fact, sixteen would be even better than twelve.

NEW MACHINERY AND PROCESSES

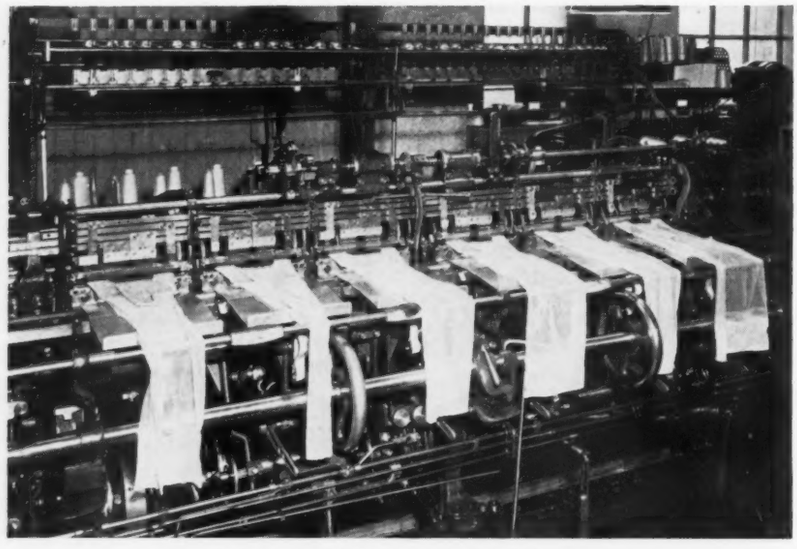


Fig. 1. High-Speed Heeler (Reiner)

Single-Unit Stockings Without Looping

Single-unit stockings are produced by an entirely new method, which eliminates looping, announced recently by Robert Reiner, Inc., Weehawken, N. J. The Einsiedel-Reiner "Combi" full-fashioned knitting machine gives continuous, uninterrupted knitting of the leg and foot on one machine, the insertion of the lower heel being carried out on a separate machine by automatically connecting the heel with the toe. This machine, which is called a high-speed heeler, also makes possible the use of conventional leggers to produce a single-unit stocking.

The knitting machine is an improved model of the "Combi" machine described in the June, 1936, issue of TEXTILE WORLD. It has an operating speed of 75 to 80 courses per minute and produces 10 to 11 doz. of 45-gage hose per 8-hr. shift. Features include an undivided needle bar, presser bar, and knocking over bar; and provision for ten carriers per section. Uninterrupted knitting is obtained from welt to toe. The machine automatically effects a wider foot against the heel area.

After the stocking is knit, it is placed on the topping stand shown in Fig. 2. Here on parallel points the high heel and sole are topped. The high heel and sole courses, after being separated by a cutting knife, swing into straight position. The stocking is then placed on the heeler. (Fig. 1), which knits the lower heel and, as it knits, gradually brings over the sole loops to the inner selvage of the heel and thereby interknits the selvage loop with the sole loop. Portions of a stocking as it comes from the knitting machine and from the heeler are shown in Figs. 3a and 3b.

The heeler is a high-speed automatic machine and does not require a skilled operator. It operates at a speed of 90 courses per minute and is available in 6- to 12-sections, the 6-section machine producing 38 doz. per 8-hr. shift. A 6-section heeler will take care of two or three 24-section knitting machines. Two to three topping stands are required for each heeler. The heeler is designed for making plain reinforced heels, plated heels, and the heel-within-a-heel type.

Attachments have also been developed which make it possible to produce "Combi" blanks on conventional leggers. The topping and joining of the heel and sole are then carried out as described above.

Among the advantages cited for this method of producing single-unit hosiery are the following: ravel

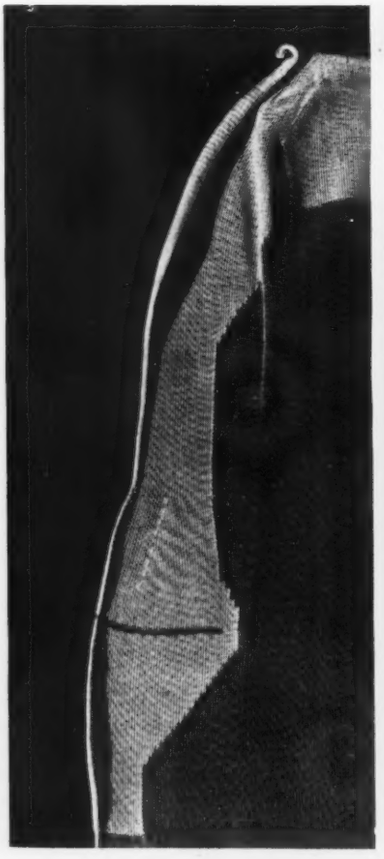


Fig. 3A. Blank before topping

Fig. 3B. Stocking from heeler

Fig. 2. Topping Stand

courses and silk waste in instep, breakouts in instep by knitting needles or topping, instep mis-matching, and silk lot division are eliminated; it is possible to knit very tight stockings; less fixing and adjusting are required; uninterrupted instep knitting is advantageous for producing mesh, lace, and fancy designs; handling of material is greatly reduced; superior connection of heel sole gives greater elasticity; production is greater; and producing costs are lower.

Robert Reiner has also introduced an improved high-speed tricot machine, which will be described and illustrated in an early issue.

Modified Spinning System for Long Fibers

A system for spinning worsted and other long-fiber yarns on cotton machinery is being introduced into this country by its inventor, Jan Weinberger, a consulting textile engineer of Brno, Czechoslovakia. The system, which was developed through experiments extending over a period of ten years, is designed to handle coarse fibers as long as 6 in. and fine fibers as long as 4 in. It is stated that the system is being used successfully in European mills for producing worsted, synthetic, and blended yarns on cotton machinery. Felix Pfeffer, of St. George Textile Corp., 1071 Sixth Ave., New York, is American agent. Parts for the system can be made in the machine-shop of the mill; and Mr. Weinberger will act as technical advisor in their making and installation, and in training of operatives.

Installation of the Weinberger system in a cotton mill requires changes in the drawing frames, the flyer frames, and the spinning frames. The drawing frames require new roll-stands and rolls, and a mechanism in the coiler-head to remove static electricity, by mechanical means. Two drawing processes are required for coarse fibers, and three drawing processes for fine fibers. Only two slivers are fed at the first process, but the customary six slivers are fed at subsequent processes.

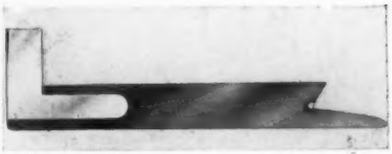
Flyer frames require only a change of rolls, the new rolls being installed on the regular roll-stands. For coarse fibers, the slubber process can be eliminated. All roving processes are creeled two ends up. Due to the added length of staple processed on this system, twist can be decreased 40%. Correspondingly, an increase of about 75% in production is claimed.

Spinning frames require a minor change; that is, the substituting of a light floating roll of small diameter for the middle, leather-covered roll. This effects a decidedly lower draft, which the added staple length makes possible. The increase in spinning production is asserted to be the same as that in roving processes.

This system, which employs the long-draft principle, is said to be applicable to combed wool and wool tops to produce worsted yarn, and to spun rayon and numerous other long fibers, and can be installed without danger of throwing the mill out of balance. Also, it is said that the roving processes in this system are as effective for processing cotton as for processing longer fibers. It is necessary, however, to convert the drawing and spinning processes back to the cotton system when processing cotton.

Knitting-Machine Sinker

Of interest to full-fashioned hosiery mills is a new sinker developed by Thomas & Skinner Steel Products Co., Indianapolis, Ind. It is stated that this sinker is subject to less



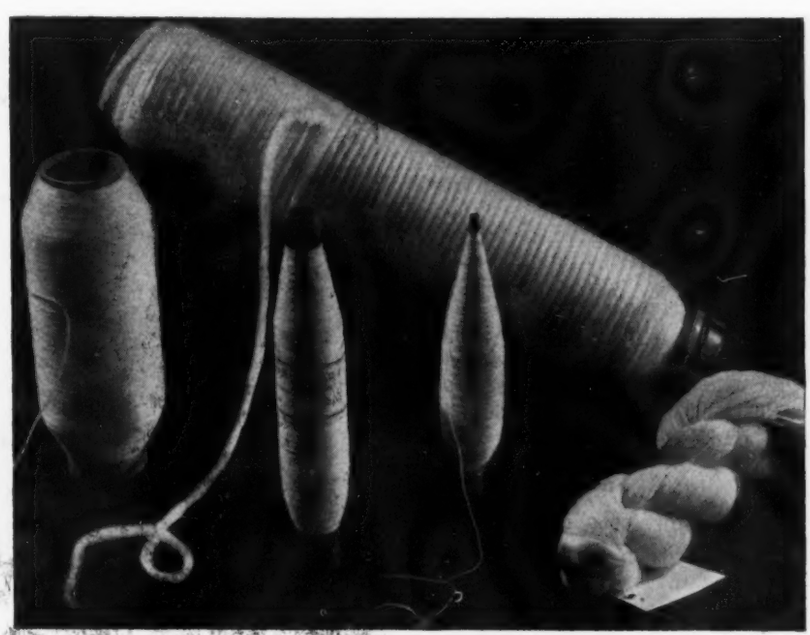
Knitting-Machine Sinker (Thomas & Skinner)

breakage, due to the fact that there are no holes punched in it for rivets and that the butt or heel plates are welded to the sinker by a special process which permits the use of much harder material than is practical when rivets are used.

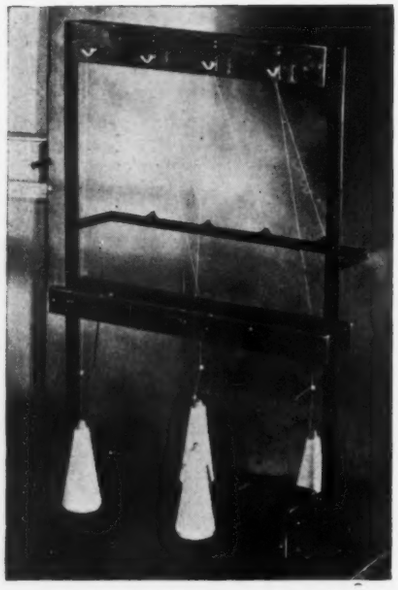
Advantages claimed include longer life, due to the harder butt and the fact that the throat of the sinker is hardened at the point which contacts the yarn.

Knitting-Machine Stop Motion

An electro-magnetic stop motion applicable to spring-needle knitting machines has been placed on the market by Nemsco, Inc., 53 Pine St., Nashua, N. H. As may be seen in the accompanying photograph of a small demonstration model, the motion is mounted on a vertical frame which can be erected close to the machine to be controlled. The cones or other packages (4 to 32 in number) are mounted on pin boards located below the frame. The yarns are first fed to a series of guides which may be adjusted for height to give any degree of ballooning required. The yarns then pass under feelers which, when ends break or



Worsted Roving, Yarn, and Fabric processed on Cotton Machinery (Weinberger System)



Knitting-Machine Stop Motion (Nemsco)

run out, fall to close a circuit and stop the machine.

The yarns then pass upward and run over another row of feelers at the top of the machine. These feelers will close a circuit if loss of tension due to a yarn break or other cause permits them to swing upward, and they will also close the circuit if too much tension pulls them downward. The latter condition would obtain if, for example, a yarn snarl should be stopped by one of the guides just above the cone. The springs which hold the feelers in the top row can be adjusted individually to provide any tension wanted, it being necessary only to turn a small knurled wheel with the thumb.

From the top, the yarns run downward through guides on a horizontal bar which may be adjusted to whatever height is needed to feed the yarns directly to the machine. There is 15 to 17 ft. of yarn between the cones and the machine. This length minimizes the danger of a broken or run-out end disappearing into the machine for a press-off before the machine is stopped automatically. It is safe therefore for an operator to let his cones run out completely, eliminating waste, as the machine will be stopped in time for him to tie a new end to the old.

The actual stopping of the machine is accomplished by means of a relay and solenoid. There is only a 4-volt potential at the contacts; but the small solenoid, operated at 24 volts, affords a 3-lb. pull on the clutch release, and even this pull can be increased by suitable leverage. No current is employed by the stop motion except when it is called upon to operate. As the knitting machine itself stops, all circuits are opened automatically and no current passes through the machine. The stop motion resets itself for the resumption of machine operation.

Squeeze Rolls

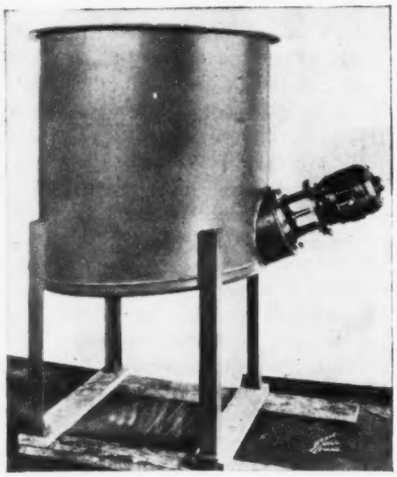
More uniform extraction, with a higher percentage of moisture removed without sacrificing continuous or straight-line production, is the claim made for the new Model G squeeze rolls being manufactured by James Hunter Machine Co., North Adams, Mass. The new model is said to be usable as a separate unit, in combination with a scutcher, in continuous cloth carbonizing or washer lines, or on tracks in wet finishing rooms; and to be adaptable to any woven fabric, either flat or pile type, of cotton, rayon, woolen, worsted and blended or manipulated yarns.

Valves and pressures are regulated by a new patented hydraulic control, which eliminates dependency on weights, levers, and compounding; in place of the usual mechanisms, hydraulic chambers are fitted to the unit, and pressure is controlled by forcing water into either the top or bottom hydraulic cylinder.

The Model G is said to be practically "fool-proof," in that it requires no slot closers, strainers, pipe lines, valves, or pumps, which may get out of order. The machine is available with or without driven scroll or opening rolls, and with or without variable-speed drive, and operates on 7½ hp.

Side-Drive Agitator

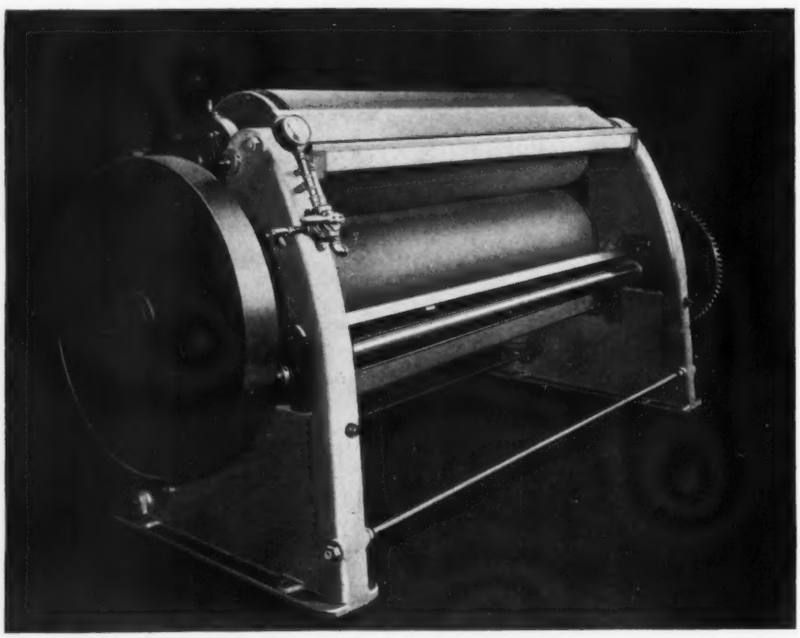
A side-drive agitator, one of the desirable features of which is that the top of the tank is clear at all times, has been introduced by New England Tank & Tower Co., Everett, Mass. Easily attachable to side of tanks, agitators of this type are said to be useful in color mixing and blending, dissolving, and other processes involving comparatively simple agitation.



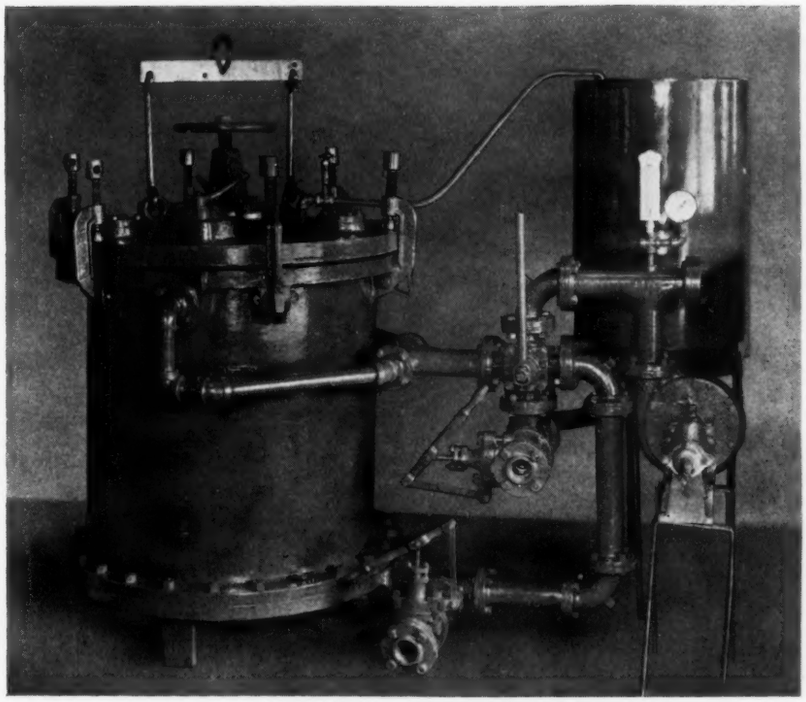
Side-Drive Agitator (New England Tank and Tower)

Standard units use a direct drive from motor, stirrers running at motor speeds.

The agitators can be supplied equipped with standard open motors, or with splash-proof, totally-enclosed, or explosion-proof types, depending on service to which the units

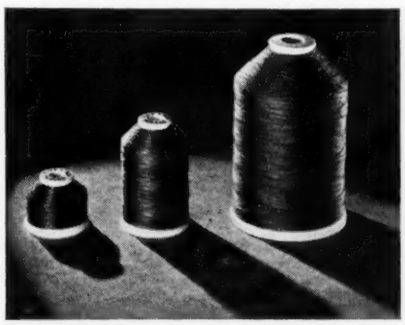


Squeeze rolls (James Hunter)



Raw Stock and Package Dyeing Machine (Morton)

are to be subjected. Stirrers can be fabricated from steel, monel metal, bronze, stainless steel, or any other commercially available alloy; depending on the process in connection with which they are to be used.



Single-Head Thread Spools (Atwood, Crawford)

Single-Head Thread Spools

A novel, single-head, wooden thread spool, called the "Air-Flo," has recently been perfected by Atwood, Crawford Co., Pawtucket, R. I. The construction of the spools, it is stated, assures even unwinding, with no chances of thread catching or caving in, to cause snarling and breakage. The "Air-Flo" is believed to be the first single-head, wooden spool to be used for both commercial and retail thread packages. It is made in sizes to hold from 50 yds. up to 1 lb.

Coincidental with development of the new spools, Atwood, Crawford Co. has worked out a new winder attachment, designed to make the winding process simpler and more efficient. The attachment is adaptable to standard Universal winders, and is said to be virtually fool-proof, requiring practically no attention or further adjustment after being once regulated.

Raw Stock and Package Dyeing Machine

A new-model combination raw stock and package dyeing machine has recently been developed by Morton Machine Works, Columbus, Ga. The machine is said to contain many improvements over older models, among them being the use of only six eyebolts to clamp down the lid (instead of ten) and considerable strengthening of the lid.

The new machine has a capacity of 75 lb. of raw stock, 90 lb. of yarn on 5/8-in. tubes, or 200 lb. of yarn on springs.

In addition to development of this new model, Morton has improved its horizontal revolving beam and package dyeing machine and beam bleaching machine. It is stated that this machine, in which the beam is placed in the machine in a horizontal position and slowly revolved during dyeing, has the lowest possible dye liquor content coincident with high-class dyeing, and requires in its operation less steam, water, and labor.

Water Cooler

Included in the line of water coolers for 1938 announced by the Commercial Refrigeration Section of General Electric Co., Nela Park, Cleveland, Ohio, is "custom tailored" model for textile mills. This cooler, known as Model RM-73, has been specifically designed for those locations where lint and dust might damage the refrigerating mechanism. Features of the cooler include stainless steel cooling chamber, convenient foot-pedal control, contamination-proof bubbler, anti-splash basin, and other improvements. The unit is completely self-contained and ready to plug in.

Water Cooler (General Electric)

NEW DYES & CHEMICALS

General Dyes

General Dyestuff Corp. announces following products: Acid Violet 5BL, a new homogeneous acid dye distinguished from the other acid violet brands by a very bright shade and increased fastness to light; it dyes even clearer and redder shades than Acid Violet 6BN. Diazo Bordeaux 7B Extra Conc., a developed color which, when diazotized and developed with Developer A, produces on cotton or rayon full shades of a bluish bordeaux of good fastness to washing. Fastusol Turquoise Blue LG, a direct dye of excellent clarity and very good to excellent fastness to light; it

yields bright greenish blue shades of a purity previously not obtainable even with the basic dyes. Fast Orange Salt GGD, is a new fast color salt which, in combination with the Naphtols of the AS range, yields yellowish orange shades of excellent fastness properties.

Silk Soaking Compounds

Announcement of two new silk soaking oils and a powder—which combines alkaline salts and mildew preventives—also used in silk soaking formulas, is made by E. F. Houghton & Co., Philadelphia. Silklubric No. 60 is a balanced blend of sulphonated animal and vegetable oils to which has been added a non-oxidizing white mineral oil and a wetting-out agent. It is used for soaking prior to direct knitting. It is said to offer advantages of more surface lubrication, faster wetting out, more uniformly conditioned tram, and cleaner-running silk. Silklubric C differs from No. 60 in that it does not contain any mineral oil. Silklubric soaking powder is a product containing the proper proportions of alkaline salt and mildew preventive. Its use makes it necessary to use only two ingredients in the soaking bath—the oil and the powder.

Water Repellent

A new type of water repellent, designed for use on materials in which both repellency and body are desired, is announced by E. I. du Pont de Nemours & Co., Wilmington, Del. Known as Aridex HW, this compound is a special wax and aluminum salt emulsion with a high solids content. It is particularly recommended by the manufacturer for use on heavy cotton goods to give greater weight and a firm hand, and it is also expected to be useful on all types of cotton, linen, rayon, and acetate fabrics.

NEW PUBLICATIONS

COTTON SPINNING; by H. H. Willis, G. H. Dunlap, and Vernette B. Moore; Textile Foundation, Washington, D. C.; multilithed copies obtainable from H. H. Willis, Clemson, S. C., at $1.50.

This is the fifth in a series of seven books on cotton yarn manufacture sponsored by the Textile Foundation. A complete list of books of the series published to date is as follows: "Cotton Opening, Cleaning, and Picking," "Cotton Carding," "Drawing Frames," "Roving Frames," and "Cotton Spinning." Two additional books, one on cotton classing and the other on cotton combing, probably will be completed by June of this year.

The series will comprise a complete course of instruction for the student of cotton yarn manufacture; and also should serve as a ready reference for the practical mill man.

"Cotton Spinning," for the first time, standardizes the nomenclature of the spinning frame, even to the smallest detail. It presents a thorough discussion of every motion and mechanism of the ring frame. Numerous every-day practical mill problems are answered in this volume, in such a way as to make it almost indispensable to spinning room overseers and second hands, and mill superintendents; and the book is not beyond being of considerable value to section men and fixers. For instruction purposes, it is as readily adaptable to vocational and trade schools as it is to colleges and formal textile schools. It is written in the same clear, simple, and understandable style as are Dean Willis' other books.

A list of topics discussed includes development of the art of spinning, the spinning frame and its spindles, the traveler, the spinning ring, the traverse, thread guides, and separators, the drawing rolls, the builder motions, conventional three-roll drafting and long draft, large-package spinning, draft calculations on spinning frames, twist in yarn, yarn numbering systems, production calculations, a report on mill practices, causes of bad spinning, types of drives for spinning, spun rayon, humidity control and air conditioning in the spinning room, and yarn testing.

LABOR'S ROAD TO PLENTY; by Allen W. Rucker; L. C. Page & Co., Boston; $2.50.

In a technical study of present employment problems the author shows that we can have full employment of the idle willing to work and larger annual incomes for every industrial wage-earner who does work. He gives a resume of the struggle for the last 15 years between the American system of pay-proportionate-to-productivity and the European guild system of regimented industry and arbitrary price, wage and hour regulation, with the results in certain American sectors where the European system has become entrenched through legislation and unionization.

He points out such pertinent facts that the hourly wage is not an income but a rate at which income is earned; that the average income per wage earner in American factories is strictly proportionate to the sales values which that average worker helps to produce; that, over the long term period, factory payrolls in dollars are limited, if not determined, by farm income.

Mr. Rucker believes that the principle of pay-proportionate-to-productivity provides industry a base upon which it may stand before labor and the nation to show the futility and danger of wage-and-hour regulation, and present to both an individualized plant compensation plan which provides labor, industry and the nation with an opportunity to produce and share in a far more abundant wealth than could any scheme of regimentation.

Although the author is not original in his theory, he is convincing for he approaches it in a scientific manner, and his book deserves great consideration today in the face of industrial legislative trends.

GRAPHIC ROUTES TO GREATER PROFITS; by John W. Esterline; published by Esterline-Angus Co., Indianapolis, Ind.; 320 pages; price $3.00.

This is one of those rare books that are of intensely practical use to the readers. Devoted to the use of graphic instruments in increasing the productive capacity and the efficiency of industry, it contains 250 case studies, each covering a distinct problem, giving the procedure followed, the graphic charts obtained and the solution reached. It is in truth a volume of experience rather than opinion.

After an introductory section divided into three chapters under the captions "The High Cost of Inefficiency," "What Graphical Representation Means" and "Classification of Industrial Problems," the remainder of the book is in five divisions: "The Problems of Power"; "The Problems of Machines"; "The Problems of Processes"; "The Problems of Men"; "Research and Special Problems." The case studies throughout the 19 chapters are numbered serially and are carefully cross-indexed.

The volume, which includes 450 illustrations, is a practical contribution to the art of applying the scientific method to the conduct of industry. It is also interesting reading because from beginning to end, the author has endeavored not only to impart information but to spur the reader to a continuous re-appraisal of his own practical methods and achievements.

NEWS OF SUPPLIERS

Pennsylvania Salt Mfg. Co., Philadelphia, has completed the erection of a hydrogen peroxide plant on its Wyandotte, Mich., property. The entry of Pennsylvania Salt into the hydrogen peroxide field enables them to offer a line of bleaching agents including chlorine, chlorinated lime, sodium hypochlorite, Perchloron, and hydrogen peroxide.

Scott & Williams Inc., Laconia, N. H., and New York, N. Y., will soon transfer its general offices from New York to the plant at Laconia, according to Walter L. Toy, president. Sales offices will be maintained at 366 Broadway, New York, as in the past.

Thomas & Skinner Steel Products Co., Indianapolis, Ind., has appointed Henry Anner, Greenville, S. C., as its representative in the southern States. Mr. Anner has for several years been contacting the southern textile trade. The company offers a line of knitting machine parts and a reconditioning service.

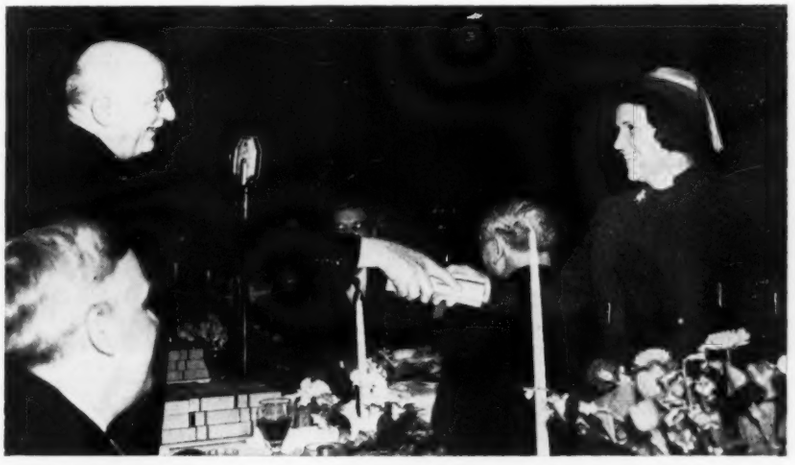
Hemphill Co., Pawtucket, R. I., at recent meeting of directors, elected Alfred L. Hutton, Jr., as president. The company is offering a new line of Banner automatic self-topping machines to supplement the Banner transferred-top hosiery equipment. More than 20 years with the Hemphill Co., Mr. Hutton has served as vice-president in charge of production and sales for the last two years, and has been associated closely with the development of the self-topping machines just announced.

Charles B. Johnson, Paterson, N. J. writes to us as follows: "On page 68 of the Annual Issue of TEXTILE WORLD, in an article on 'Rayon and Silk Developments,' the author states: 'Several builders have placed on the market seven-cylinder sizers which can be changed from the cotton to the silk system in a few hours' time.' In view of the fact that we hold a patent on the feature which makes it possible, simply by changing the end, to use the same sizer for warps made on either the silk or cotton system, we feel that this statement may be misleading to some of your readers. We shall appreciate it, therefore, if you will publish this letter, pointing out that the changeable end is a patented feature obtainable only on our sizers."

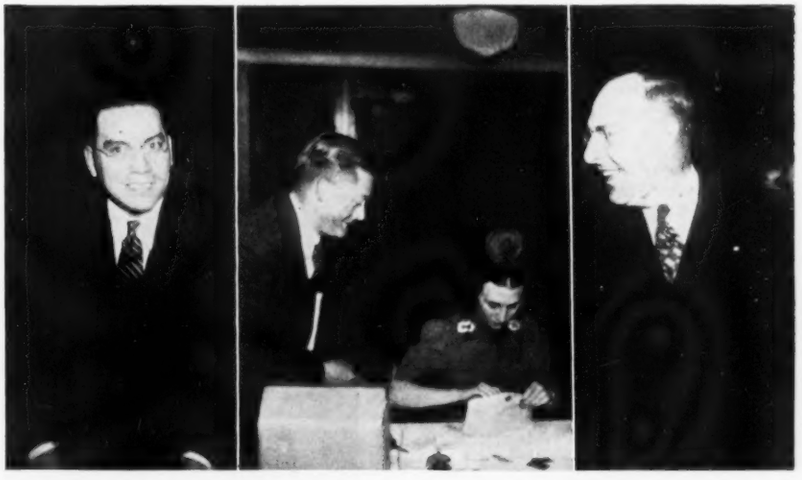
Torrington (Conn.) **Co.'s** advertising campaign on the new Torrington needle bearing was cited for honorable mention in the Annual Advertising Awards, sponsored by *Advertising & Selling Magazine*, for technical excellence and ethical soundness in industrial advertising. The campaign, prepared by the Hazard Advertising Corp., New York was designed primarily to give a concrete factual story to a design-engineering-minded audience, with presentation of pertinent information on a highly technical product. Among the many applications developed, are several in the field of textile machinery. A number of the advertisements in this campaign have been reprinted in booklet form by the company.

Jacques Wolf Co., manufacturing chemists and importers, Passaic, N. J., announce, effective March 1, 1938, the appointment of Walter D. Deuble as New England district sales manager, with headquarters at 126 Pawtuxet Ave., Edgewood, R. I. Mr. Deuble has been with Jacques Wolf 25 years, covering New England the last 20 years.

Westinghouse Electric & Mfg., Co., has announced a realignment of the Industrial Department. Three new departments, Industrial, Resale and Industry Engineering have been formed. The Industrial Department has a staff of field-trained sales engineers each of whom has had broad experience with industry problems. C. B. Stainback, formerly assistant manager, will be manager. The General Mill Electrification Section of this department (covering textile) will be managed by G. D. Bowne. The Resale Department will devote its facilities to servicing manufacturers whose products incorporate electrical equipment and other secondary distribution channels



Textile Machine Works, Reading, Pa., recently presented 88 of its 25-year men with gold watches in appreciation of their services. Picture shows Henry Janssen presenting watch to Miss Mabel Balmer, the company's only woman employee.



Three snapshots made by TEXTILE WORLD'S *candid cameraman at a recent divisional meeting of A. A. T. C. C. Left to right: Dr. Sivert Glarum, of Rohm & Haas, Inc., Philadelphia, who presented a technical paper at the meeting; Dr. Raphael E. Rupp, Chairman of the Piedmont Section; Arthur R. Thompson, Jr., of Ciba Co., Charlotte, N. C.*

such as industrial agents and jobbers. Bernard Lester, also assistant manager of the former Industrial Department, becomes manager.

U. S. Bobbin & Shuttle Co., Providence, R. I., at the March meeting of the board of directors, elected the following officers: chairman of the board, Edmund C. Mayo; president and treasurer, Thomas A. Francis; vice-president, Charles H. Jordan; assistant treasurer and general manager, William J. McGeough; secretary, Wesley G. Carlson.

Canusa Corp., Kearney, N. J., has become sole representative in United States and Canada of Temaco (Textil-Maschinen-Campagine) of Chemintz. American Textile Engineering, Inc., is now solely employed in manufacture and sale of its textile conditioning systems, high-draft systems, etc.

Knowlton & Newton Co., Inc., Lowell, Mass., have recently made an agreement with **Whitin Machine Works** as their licensed agent covering the manufacture and sale of their patented return air condenser as used in picker rooms.

Louis Hirsch Textile Machines, Inc., New York, has announced, following the death of Louis Hirsch, that its business will continue to function without change along lines as in the past.

Fairbanks, Morse & Co., recently made formal opening of its display room on the first floor of the modernized and renamed Fairbanks-Morse Building at 600 S. Michigan Ave., Chicago. Dominating the exhibit is a ten-ton, eight-cylinder Diesel engine for marine service. Grouped about this are electrical machinery, pumps, scales, railroad and farm equipment, household appliances, automatic coal burners and air conditioners.

D. F. Sweeny has been made southern representative for Mitchell & Smith, Inc., Detroit, Mich., manufacturers of cork cots. His headquarters will be in Greenville, S. C., and he will cover the entire southern textile area. Mr. Sweeny is the son of R. P. Sweeny, superintendent of Exposition Cotton Mills, Atlanta, and has had many years' experience in the textile cork business.

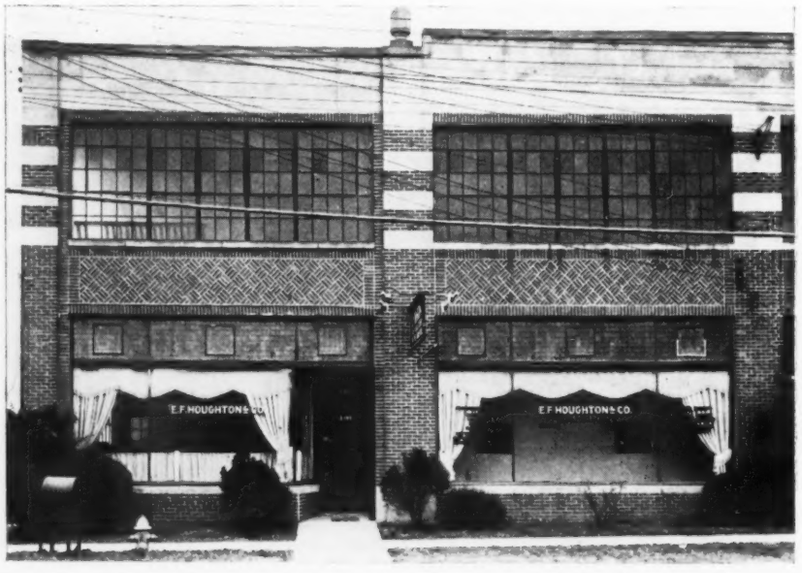
Steel Heddle Mfg. Co., has appointed Fred L. Still southern representative succeeding Henry E. Littlejohn, resigned, with headquarters at Greenville, S. C. Mr. Still has been superintendent of the Victor plant of the Victor Monaghan Co. at Greer, S. C., and is a past president of the Southern Textile Association.

Alfred L. Hutton, Jr., new president of the Hemphill Co.

Leonard S. Little, newly elected treasurer of Amalgamated Dyestuff and Chemical Works.

G. D. Bowne, head of Westinghouse's Mill Electrification Section.

View of one of two sales-service laboratories in new laboratory building completed recently by A. E. Staley Mfg. Co., Decatur, Illinois. The building has a frontage of 122 ft., with wings extending back 75 ft. on each side. It is of two-story construction, with a full-height English basement. It contains research, process-control, chemical-engineering, and sales-service laboratories; a pilot plant; library; and offices.



E. F. Houghton & Co., Philadelphia, have opened a new office and warehouse at 1301 Morehead St., Charlotte, N. C., as illustrated above. It is served by a railroad siding. W. H. Brinkley, Southern divisional sales manager, is in charge.

FREE FOR THE ASKING

1. Gages. Ashton Valve Co. Catalog No. 38G, covers Ashton's industrial gages, describes and illustrates numerous gages; includes data on mounting, dimension, graduation, etc.

2. Scale and Corrosion control. D. W. Haering & Co., Inc. Second edition of *Organic Methods of Scale and Corrosion Control*, a 16-page booklet, contains a technical exposition on the application of organic chemistry to the subject under discussion. Includes graphs, formulas, and equations of interest to chemists and engineers responsible for scale or corrosion control in industrial plants.

3. Lubricants. Fiske Bros. Refining Co. 4-page folder describes necessity for control of friction, and company's lubricating products.

4. Hoists. McCollum Hoist & Mfg. Co. Two folders, Nos. 101 and HH2, describe and illustrate company's lines of electric and chain hoists.

5. Motors. Century Electric Co. Folder describes uses and mechanical details of automatic-start induction polyphase motors.

6. Heavy-Duty Pushbutton. Westinghouse Electric & Mfg. Co. Type HD heavy-duty pushbuttons, for use on a-c. and d-c. pilot circuits, are described and illustrated in an 8-page pamphlet.

7. Thermometers. Foxboro Co. Construction, uses, and advantages of company's Mono-therm system thermometers are described in Vol. 1, No. 1 of this company's *News Bulletin*.

8. Lighting. General Electric Vapor Lamp Co. Bulletin entitled *Mercury Light for Better Sight* illustrates and describes company's line of combination Cooper Hewitt-Incandescent lamps; includes photographs of industrial installations, and engineering data.

9. Stokers. Detroit Stoker Co. Bulletin commemorating company's 40th anniversary illustrates stoker types from 1898 to 1938.

10. Electric Wire. U. S. Rubber Products, Inc., Mechanical Goods Division. New manual contains data and specifications on wire and cable; includes section devoted to comparative tests of products of several manufacturers, stating relative merits and outstanding features in each.

11. Packaging. Old Dominion Box Co. Novel booklet describes application of modern packaging to a wide variety of products; contains many photographs, including those of several textile packaging developments.

12. Electric Cable. Anaconda Wire & Cable Co. 36-page booklet, No. D-41, describes company's varnished cambric cable; includes large section devoted to physical properties of this type cable, recommended thickness of insulation, test potentials, current-carrying capacities, etc.

13. Stroboscope. Standard Mill Supply Co. 4-page folder describes in detail use of the stroboscope in checking speed of ring travelers, spinning frames, rayon buckets, and other textile machinery.

14. Dyes. Ciba Co., Inc. February issue of *Ciba Review* includes articles on "Technical Details of Silk Weaving and Dyeing at Lyons," and "A New Method for Printing Cibanone Blue RS Double Paste on Cotton and Rayon." March issue of same publication contains articles on scarlet dyes, and dyeing with Neolan Blue GG.

15. Oil-Retaining Bearings. Bound Brook Oil-less Bearing Co. Illustrated loose-leaf booklet contains data on company's line of "Compo" self-lubricating bearings; includes information on structure, methods of installation, determination of dimensions, die sizes, etc.

16. Looms. Crompton & Knowles Loom Works. *Photo News*, No. 3, describes and illustrates processes of loom building; also pictures several recent C. & K. installations.

17. Corrosion-Resisting Metals. International Nickel Co., Inc. 28-page booklet lists 400 practical applications for Monel, nickel, and Inconel under corrosive conditions; contains technical data concerning each of these products.

18. Roller Bearings. Hyatt Bearing Division, General Motors Corp. Booklet lists ten requirements of good roller bearings; describes how Hyatt bearings meet each of these requirements.

19. Sizing. Charles B. Johnson. February issue of *Rayon Warp Sizing Specialist* contains article on machine

READERS interested in the literature reviewed on this page may secure copies by writing to TEXTILE WORLD, 330 West 42d St., New York, giving their company connection.

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developments, answers questions on size consistency.

20. Bearings. SKF Industries, Inc. 4-page folder, entitled "New Wings", pictures and describes recent additions to SKF plant.

21. Machine Shop Equipment. Toledo Pipe Threading Machine Co. Catalog 38, 104 pages, contains data on company's pipe-threading and cutting devices, work benches, boring tools, power drives, etc.

22. Agitating Equipment. New England Tank & Tower Co. Catalog No. 380 describes company's line of agitators; contains large "handbook and data" section including graphs showing agitator performance under various conditions, and torque for various horsepowers and speeds.

23. Materials Handling Equipment. Mullins Mfg. Corp. Catalog No. 6 describes company's line of skids, boxes, trucks, and other materials-handling equipment.

24. Cleaning Equipment. Invincible Vacuum Cleaner Mfg. Co. Booklet describes company's vacuum cleaning equipment for floors, walls, and machine parts; includes list of organizations using Invincible equipment, and several case studies of results achieved.

25. Photo-Electric Equipment. Photoswitch, Inc. Leaflet describes low-cost photo-electric control equipment designed for industrial use; lists many applications of this type equipment to industrial problems.

26. Hygrometers. Brown Instrument Co. Catalog No. 6502 describes company's line of recording and controlling hair hygrometers; both electrically and air-operated types are described.

27. Oil-Retaining Bearings. Boston Gear Works, Inc. 16-page booklet, published by distributors of "Oillite" bronze bearings, manufactured by Chrysler Corp., describes manufacture, and advantages of bearings of this type; includes data on prices, sizes, and general characteristics.

28. Ventilating Equipment. South Bend Air Products, Inc., Catalog No. 1A describes and illustrates company's line of ventilating units; contains data section of facts about ventilation and tabular arrangement of useful statistics.

29. Recording Instruments. General Electric Co. 8-page pamphlet, No. GEA-2635, describes methods of reducing production and maintenance costs and equipment investment with company's line of strip-chart recording instruments.

30. Motors. Allis-Chalmers Mfg. Co. Leaflet No. 2124-A describes and illustrates inclosed, fan-cooled motors designed for service in locations where dust, dirt, acid fumes, and moisture are prevalent.

31. Materials Handling. Robert Gair Co., Inc. 46-page textbook describes sealing of corrugated and solid fiber containers; includes sections on adhesives—hand sealing and automatic sealing, gummed paper tape, metal stitches and staples, and metal straps or wire.

32. Pumps. Deming Co., Salem, Ohio. Bulletin 4300 describes company's line of motor-mount pumps; contains specifications, capacities, dimensions, and other useful statistical data.

33. Piping. U. S. Stoneware Co. Bulletin tells how to make "Flexlock" rubber joints, dissemble coupled lines, use split sleeves for handy connections and quick repairs, etc.; includes dimensions and specifications.

34. Lighting. Miller Co. Booklet gives general information on factory lighting, and complete data, such as construction and particular applications of company's Alzak Aluminum reflector line for industrial service.

35. Office Equipment. Burroughs Adding Machine Co. Bulletin describes construction, service, and advantages of Burroughs typewriter bookkeeping machine, with particular reference to time-saving features.

36. Valves. Hancock Valve Div., Manning, Maxwell & Moore, Inc. Eight-page bulletin, No. 4-4500, describes and illustrates characteristics of company's bronze valves; contains data on prices, weights, dimensions, pressure ratings, etc.

37. Switchboards. Allis-Chalmers Mfg. Co. Bulletin 1190 gives application, construction, type, and shipment information on company's line of switchboards. Illustrated with photographs of various switchboards.

38. Dryers. Philadelphia Drying Machinery Co. Illustrated pamphlet describes features of new stock-drying system; includes diagramatic data on air-flow, and other useful information.

Editor, TEXTILE WORLD, 330 West 42d St., New York, N. Y.

Please have the manufacturers send me, without obligation, the literature circled below. (Numbers correspond to descriptive paragraph numbers.)

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38

NAME _____

POSITION _____

ADDRESS _____

COMPANY _____

April, 1938

THE PERSONAL PAGE

W. A. Broadfoot, former general manager and assistant treasurer of Aspinook Finishing Co., Jewett City, Conn., has been elected president of the newly organized Aspinook Corp. **R. W. Smith,** sales manager, also becomes vice-president. **H. F. Young, Hamilton Pell, B. R. Armour, A. G. Swiger, E. E. Gilbert, Viggo Carlson and G. B. Schwab,** with Mr. Broadfoot, are directors.

Wheeler McMillen, president of National Farm Chemurgic Council, has been elected director and vice-president of Chemical Foundation. He becomes ranking officer since no immediate successor is proposed for the late Francis P. Garvan who held the presidency for 18 years.

C. J. Bryan has been elected president and general manager of the Tennessee Woolen Mills, McMinnville, Tenn., succeeding the late M. T. Bass, president. Mr. Bryan has been secretary and treasurer of the mills.

A. G. Dudley is president of a newly organized wool blanket mill at Athens, Ga. The company has begun operations with 100 operatives on the pay roll, with an initial output of 90,000 blankets annually. Other officers include **O. D. Grimes,** general manager, **Abit Nix,** secretary, and **O. D. Grimes, Jr.,** superintendent.

Fred M. Allen resigned as secretary of Southern Combed Yarn Spinners' Association, Gastonia, N. C., effective April 1. His successor has not been named; **R. D. Hall,** president, will supervise the activities of the association until an appointment is made. Mr. Allen, formerly a newspaper man in Florida, went to Gastonia in 1916 and was the first secretary of the Gaston County Textile Manufacturers Association from its organization in 1924 until it was merged into the spinners' association, five years ago. Mr. Allen has not announced his plans.

Louis Galle, associated for 31 years with the management of Jules Desurmont Worsted Co., Woonsocket, R. I., and its successor, the Riverside Worsted Co., most recently as chairman of the board, has retired from active connection.

William H. Gosch, president of National Association of Hosiery Manufacturers has appointed the following nominating committee to supply the slate to be voted on at the annual meeting in Philadelphia, April 27: **J. Lee Bausher,** Infants Socks Inc; **H. P. Hardin,** Triangle Hosiery Co; **Irving K. Hessberg,** Van Raalte Co.; **Carl S. Kincaid,** Magnet Mills and **N. F. Lahr** of Cooper, Wells & Co.

Fred L. Still, former president, Southern Textile Association, has resigned as superintendent of Victor Monaghan Co.'s Victor plant at Greer, S. C., to become Southern representative of Steel Heddle Mfg. Co.

Robert Peel Dicks, textile executive of Rockingham, N. C., has purchased controlling interest in the Rhodes-Rhyne Mfg. Co., and has become full owner of the Indian Creek Mills, Inc., both of Lincolnton, N. C.

C. C. Finch is the new president of the Anniston (Ala.) Yarn Mills Co.

Dr. G. M. Pate of Rowland, N. C. has been elected president of the Ada McLean Mills, Inc., Lumberton, N. C., succeeding **H. B. Jennings,** president since the mills were organized, who asked to be relieved. **R. H. Livermore** of Lumberton was elected executive vice-president, succeeding Dr. Pate.

G. H. Kearns recently celebrated his 25th anniversary as founder and president of Crown Hosiery Mills, Inc., High Point, N. C. The plant was founded in 1913 with 50 employees and 50 machines; the mill now has 300 workers and 600 machines.

C. C. Chesney, sales manager of Bibb Mfg. Co. and located in New York, has resigned. He was associated with the Bibb organization for 32 years.

Morell Mackenzie, manager of Glenlyon Print Works, Phillipsdale, R. I., has been made vice-president of Sayles Finishing Plants, Inc. **Jack Hutton,** Glenlyon superintendent since 1919, has been made manager.

Wallace Geer Stewart, formerly sales agent for Fall River (Mass.) Bleachery in New York, has become sales agent of Kerr Bleaching & Finishing Co., Concord, N. C., succeeding the late R. M. Odell. Mr. Stewart is succeeded by **Alfred A. Jones.**

Charles H. Dimick, has been elected president of Richmond (Va.) Piece Dye Works. He will continue as president of Textile Dyeing & Printing Co. of America, Fair Lawn, N. J.

Donald Comer has resigned as president of Pomona Mfg. Co., Greensboro, N. C., and been succeeded by **I. F. Craven,** formerly vice-president.

Henry C. Naegeli, for 11 years with L. Bachmann & Co., New York, has been appointed to head Dept. 1 of the American Woolen Co., New York. He was previously associated with American Woolen Co. for nearly 25 years.

Nash S. Eldridge has been elected assistant treasurer of J. P. Stevens & Co., New York.

William D. Anderson, president of Bibb Mfg. Co., Macon, Ga., recently announced the following appointments; **M. W. Robar,** sales manager; **G. Price Barnwell, John J. McKay, Jr.,** and **W. Allen Chappell,** assistant sales managers; **G. Dewey Jones,** production manager. **J. S. Strozier** has been put in charge of the southern territory.

E. O. Hand has been named general sales manager of Allen-A Co. Kenosha, Wis., succeeding **H. M. Appel,** resigned Mr. Hand will be located at the firm's new headquarters in Bennington, Vt., after the middle of April.

Paul W. Douglass a veteran of New York cotton goods field, having served with Wamsutta Mills for 18 years and with Cannon Mills for six years has become associated with the sheet and pillow case department of Pepperell Mfg. Co.

James E. Shields of Shields & Aronsohn, New York, has joined the rayon division of J. P. Stevens & Co.

Joseph R. Morton has resigned as representative in the Carolinas and Virginia for Tubize Chatillon Corp., to devote his entire time to the Textile Chemical Products Co., of which he is president.

Charles F. H. Johnson, Jr., head of the neckwear department of Botany Worsted Mills, Passaic, N. J., has been elected a director of his company, succeeding **Ferdinand Wilckes,** resigned.

Henry S. Park, formerly secretary and treasurer of Read & Lovatt Mfg Co., New York, has become vice-president and treasurer. **Henry W. Schliske,** who has been with the company for 25 years has been elected secretary and a director.

E. D. Johnson has been appointed sales manager of the yarns department of Collins & Aikman Corp., at the company headquarters in New York. He has been with the sales division of this company for fourteen years. Percy A. Legge with offices in Philadelphia, Boston, and New York continues as sale agent of both the worsted and wool-spun yarns.

Murray Fieldray Field, formerly with the McLaurin Hosiery Mill, Asheboro, N. C., became secretary-treasurer and general manager of the Jackson Hosiery Mill, High Point, N. C., on April 1.

Ralph Torcey, formerly consulting engineer with the

TEXTILE CALENDAR

- ***Textile Exposition and Style Show, North Carolina State College, Raleigh, N. C., Apr. 21, 1938.***
- ***Knitting Arts Exhibition, Commercial Museum, Philadelphia, April 25 to 29, 1938.***
- ***National Association of Hosiery Manufacturers annual convention, Commercial Museum, Philadelphia, April 26, 1938.***
- ***Underwear Institute annual convention, Commercial Museum, Philadelphia, April 28, 1938.***
- ***American Cotton Manufacturers Association, annual meeting, Hotel Bon Air, Augusta, Ga., April 28–30, 1938.***
- ***S. C. Carding and Spinning Division, S.T.A., Greenville, April 30, 1938.***
- ***S. C. Slashing and Weaving Division, S.T.A., Spartanburg, S. C., May 14, 1938.***
- ***American Society for Testing Materials, annual meeting, Chalfonte-Haddon Hall, Atlantic City, N. J., June 27 to July 1, 1938.***

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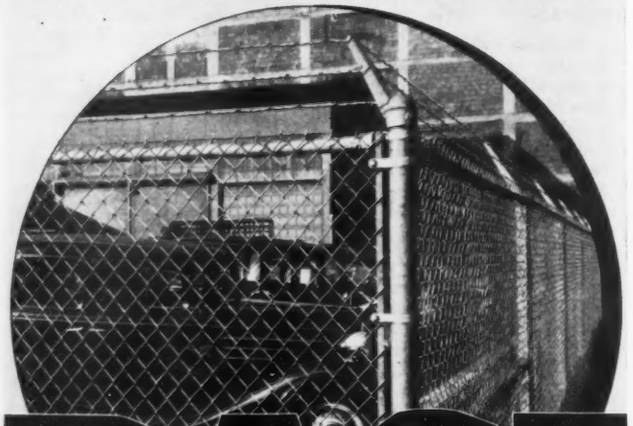

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Ames Worsted Co., Lowell, Mass., has joined the Atlantic Coal Co. of Massachusetts, at Boston, as engineer for the sales department.

W. T. Cheatham has become secretary of the Stevens Mfg. Co., Burlington, N. C.

H. W. Pittman, personnel director of the Bibb Mfg. Co., Macon, Ga., for a number of years, has become assistant to the president, **William D. Anderson.**

Julian Longley has accepted the position of agent for American Thread Mills, Dalton, Ga. He was formerly assistant superintendent of Dixie Mills, LaGrange, Ga., and of Langdale, Ala., plant of the West Point Mfg. Co.

Frank H. Gifford was elected to the board of directors of the Pierce Mfg. Co., New Bedford, Mass., at the annual meeting of the corporation.

Henry L. Taylor was elected vice-president of the Beacon Mfg. Co. at the recent annual meeting in New Bedford, Mass. New directors elected at the meeting were **James F. Armstrong** and **Henry L. Aldrich.**

Ward H. Bushee, assistant agent of the Holyoke (Mass.) mill of the American Thread Co. and superintendent in charge of manufacturing has resigned. He has been with that organization for 21 years.

George Hanna, Shelby, N. C., has been elected president of Phi Psi, honorary textile fraternity at the North Carolina State College, Raleigh, N. C.; **J. R. Burcham,** Elkin, vice-president; **B. J. Musso,** Walsenberg, Colorado, secretary; **R. B. Wood,** Gastonia, corresponding secretary; **J. V. Kirkman,** Durham, treasurer; **W. J. Peacock,** Goldsboro, senior warden; **P. Bruinooge,** Hasbrook Heights, N. J., junior warden.

Gene Bartha, formerly with M. Lowenstein & Sons, is now with the New York office of Southbridge Finishing Co.

John H. Judge returns after retirement of several years to take charge of G. A. Stafford & Co., New York, the export department of Riverside & Dan River Cotton Mills. He was previously with that firm for 15 years.

William F. Macia of A. M. Tenney Associates, New York, has been elected president of the New York City chapter of New Bedford Textile Alumni.

J. C. Milne, has been appointed manager of Montala Cotton Mills, Montgomery, Ala., which is starting up on collar cloth.

Walter M. Morton, Boston, has been elected president of the National Wool Trade Association at its annual meeting March 1. **H. Clyde More** of Boston and **Mark Harris** of St. Louis were named vice-presidents.

Edmund M. Patterson, with International Looms, Inc., New York, for 17 years, has been named general sales manager.

N. E. Burgess, heading the Cleveland Cloth Mills sales staff, has became associated with J. P. Stevens & Co., New York, as the Cleveland rayon gray goods are now sold through Stevens.

Earl C. Miller, assistant agent of Neild Mfg. Co., New Bedford, Mass., has resigned after 11 years' association previous to which he was head of the office at Booth Mfg. Co., New Bedford.

L. B. Hunt, formerly superintendent of Clover (S. C.) Mills Co., is now superintendent of Manchester (N. H.) Yarn Mills, Plant No. 1.

Charles Howard has resigned as superintendent of the Broad Brook (Conn.) Woolen Mills.

Harry J. Fenton, for the last eight years superintendent of Ideal Hosiery Mills, Maryville, Tenn., has become manager of the Murray (Ky.) Hosiery Mills, succeeding **William Egolf.**

J. F. Cuddy, superintendent of the Adrian and Madora plants of the American Yarn & Processing Co., Mount Holly, N. C., for 10 years, has resigned to accept a similar position with the Union Mill, Maiden, N. C. He has been succeeded by **J. P. Taylor,** formerly of Chattanooga, Tenn.

Milo D. Clader has resigned as superintendent of Frank Ix & Sons, Inc., Charlottesville, Va., to accept a similar position with the Duplan Silk Corp., Grottoes, Va.

Henry Miller has become superintendent of drawing and fly frames at the Bibb City plant of the Bibb Mfg. Co., Macon, Ga., and **Albert Norris,** superintendent of spooling and warping of the same plant.

Arthur M. Gordon has assumed charge of the dyeing for the Crown Dye & Finishing Co., Philadelphia, Pa.

George R. Krause has accepted the position as overseer of finishing for W. J. Dickey & Sons, Oella, Md.

D. A. Stansell has succeeded **F. L. Still** as superintendent of the Greer, S. C. unit of the Victor-Monaghan Co. Mr. Stansell was formerly superintendent of the Cascade Rayon Mills, Mooresville, N. C.

Hollis Price has been pro-

moted from shift foreman to overseer at Welanee Mill of Bibb Mfg. Co., Macon, Ga.

Clyde Winfrey has been promoted from second hand to overseer at Welaunee Mill of Avondale Mills, Birmingham, Ala.

W. Lee Smith, for the last year overseer of spinning at the Adrian and Madora mills at Mount Holly, N. C., is now overseer of spinning at the Woodlawn plant of the American Yarn & Processing Co., Mount Holly.

George W. McKenzie, Jr., formerly of the Monroe, N. C. plant of Manetta Mills, has accepted position of section man in the carding department of the Industrial Mills, Rock Hill, S. C.

David Crowell, assistant superintendent of the Concord, N. C. plant of Cannon Mills for several years, became superintendent on March 21 of the Courtney Mfg. Co., owned by the Cannon interests, at Courtney, S. C.

C. E. Dorn has become overseer of spinning at the Bibb City plant of the Bibb Mfg. Co., Macon, Ga.

Jackson L. Weldon, formerly with the West Point Mfg. Co.'s Lanett, Ala., plant, has become assistant superintendent of the Dixie Mill, LaGrange, Ga., succeeding B. W. Whorton.

W. W. Sharp, Jr., paymaster at the Mojud plant of the Mock-Judson-Voehringer Co., Greensboro, N. C., will be general manager of the new Siler City (N. C.) Hosiery Mills, now under construction.

S. P. Jenkins has become assistant superintendent in charge of carding and spinning of the Bibb Mfg. Co., Macon, Ga.

George W. Ray, formerly overseer of the spinning department of Pelzer (S. C.) Mills, No. 4 plant is now overseer of spinning at the Victor plant of Victor-Monaghan Co., Greer, S. C.

L. C. Erdman has become maintenance manager of Duplan Silk Corp.'s Grottoes, Va., unit.

J. L. Loftis, formerly overseer of weaving at the Woodruff, S. C., unit of Brandon Corp., has been transferred to a similar position at Brandon's Greenville, S.C., unit.

R. H. Hartley has assumed charge of the dyeing and finishing at the Whitemont Woolen Mills, Northfield, Vt.

A. Stanley has been promoted to superintendent of dyeing in the Thies Dyeing Co., West Warwick, R. I.

Frank H. Goettler is now in charge of the dyeing at the North Berwick (Me.) Co.

Jan Weinberger of Brno, Czechoslovakia, who recently came to the United States to survey technical conditions in the textile industry and determine the possibilities for application of his new method for spinning long staple fibers on cotton machinery. He has been connected with Gottlieb Schnabel mills in Czechoslovakia, and in the past, has done consulting work for various mills in Europe.

Archie Alexander has been placed in charge of the dyeing of the Phoenix Hosiery Co., at Milwaukee, Wis.

J. B. McNiece, formerly of Clinton, Conn., is now supervising the finishing at S. Blumenthal & Co., at Shelton, Conn.

Harold C. Barney, formerly resident manager of the Sterling, Conn., branch of the United States Finishing Co., has become resident manager of Hartsville (S. C.) Print & Dye Works.

Ellis W. Brewster, assistant treasurer of the Plymouth Cordage Co., Plymouth, Mass., has been appointed treasurer. He succeeds Francis C. Holmes, treasurer for 27 years, who was named consultant vice-president upon resigning as treasurer.

Milton Schmidt, is with the Worsted Division, Pacific Mills, New York, where he is interested in development of quality fabrics and specialty cloths for the better-grade cutting-up trade.

Al Burgess, of Needham, Mass., has been appointed superintendent of the Cabot Mfg. Co., Brunswick, Me. He succeeds **John Orswald** who came out of retirement to help a program of modernization.

Sweetman Swan is now in charge of the dyeing for the Haddam Woolen Co., Taftville, Conn.

Callaway Mills, Unity plant, LaGrange, Ga., recently announced the following transfers: **G. S. Waller,** from overseer twisting to overseer warehouse; **E. L. Stroud,** from overseer cloth room to overseer weaving, with **Edwin**

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NOVELTY-YARNS
For
WEAVERS-KNITTERS
MONTGOMERY
WINDSOR LOCKS, CONN.
Designers and Spinners of Novelty Yarns

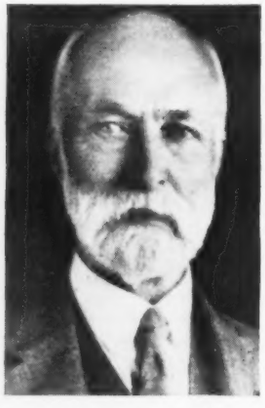
Camp as assistant; **A. J. Todd**, from overseer card room to overseer cloth room; and **J. B. Crowder**, overseer card room.

H. H. Grier, master mechanic at the Pacolet Mfg. Co., New Holland, Ga., for the last 21 years on Feb. 6, has the record of never having lost a minute on account of an accident.

K. M. Deal is now overseer of spinning at No. 2 mill of Clyde Fabrics, Inc., Newton, N. C., and **Grover C. Cildress**, overseer of carding at No. 1 mill.

Obituary

Frederick H. Bishop, aged 89, for many years general manager and then vice-president of the Universal Winding Co., Boston, Mass., died at the Quincy (Mass.) Hospital on March 19. He was a native of Ashford, Conn., and in early life was associated with J. R. Leeson, representing in this country the Scottish linen house of Finlayson, Bousfield & Co., of Glasgow. He was identified with the formation of the Linen Thread Co., under



Frederick H. Bishop

these auspices, and about 50 years ago, Mr. Bishop and Mr. Leeson retained S. W. Wardwell, inventor of the winding machine sponsored by the Universal interests, the manufacture of which was continued by the incorporated Universal company from 1893 forward. He withdrew from the linen business when engaging in the manufacture of winding machinery. He was identified with sales development during most of his career with the Universal organization from which he retired in 1934. Mr. Bishop was a founder of the Textile Exhibitors Association. He was the last surviving member of the Paul J. Revere Post, G.A.R., Quincy, and enlisted as a bugler in the Union Army at the age of 14. Since retiring he had devoted his time largely to G.A.R. affairs with headquarters at the State House, Boston, and had recently been made an honorary member of the Ancient & Honorable Artillery Company of Boston.

Frank Hughes, aged 77 years, president of Dundee Textile Co., Passaic, N. J., died in Montclair N. J., March 16.

Fred Hunter Robinson, aged 61, president and superintendent of Morowebb Cotton Mill Co., Dallas, N. C., died in Dallas on Feb. 8.

Thomas I. Charles, aged 55, president and treasurer of Conestee (S. C.) Mills, died March 15 at his home.

J. S. Cromer, aged 64, died recently at his home in Tryon, N. C. At one time he owned and operated Cromer Supply Co., Spartanburg, S. C., and later was associated with Andrews Loom Co., and Drake Corp., of Norfolk, Va.

Tiras A. Hall, aged 90, president and one of the founders of the Hall & Carey Weaving & Belting Co., Lockport, N. Y., died March 15.

George W. Duncan, president and founder of Duncan & Goette, Inc., Philadelphia thread manufacturers, died March 2.

John Harper Hoffman, aged 91, one time president of Penn Valley Hosiery Mfg. Co., Millheim, Pa., died Feb. 28.

John Legg, aged 86, former president of the Worcester (Mass.) Woolen Mill Corp., died suddenly in Pasadena, Cal., on March 20. He was a native of Trowbridge, England and came to America in 1855.

Edward O'Donnell, former secretary of Ashworth-Odell Worsted Co., Salamanca, N. Y., died March 7.

Clinton Phelps, president and general manager of the Sherman (Tex.) Mfg. Co., died recently. He was a former president of the Texas Cotton Manufacturers' Association.

Augustus P. Loring, aged 81, president of the Plymouth (Mass.) Cordage Co., from 1897 to 1936, and honorary president thereafter, died at his home in Boston on March 17.

Otto Louis Dommerick, aged 68, senior partner in L. F. Dommerick & Co., factors, New York, died March 8. He was the son of the founder of the business.

J. Tilden Hedrick, aged 60, Lexington, N. C., a former president of Neely-Travora Mills, Inc., York, S. C., died Feb. 18.

Nathan T. Folwell, aged 58, vice-president of Folwell Bros. & Co., Philadelphia, died in Montclair, N. J., March 15.

Jones Tilden Hedrick, Sr., one of the organizers of the Shoaf-Sink Hosiery Mills, died in Lexington, N. C., recently.

Herbert H. Kawnsley, aged 77, retired president of the Lion Yarn Co., Conshohocken, Pa., died March 14.

Joseph J. Rogers, aged 86, Barnesville, Ga., who built the Barnesville Mfg. Co., now the Aldora Mills, and who was instrumental in bringing to Georgia the first knitting mill, died Feb. 12.

Arthur G. Scott, aged 55, president of Provincial Cotton & Fibre Co., Ltd., Montreal, Que., died recently in that city.

C. E. Blakely, aged 43, southern representative of National Aniline & Chemical Co., with headquarters in Charlotte, N. C., died March 4 in Montezuma, Ga., following an emergency operation.

Howard D. Gordon, aged 67, of Gordon & Gordon, carbonizers, and long prominent in the New England wool trade, died suddenly March 20 at Hazardville, Conn. For many years he was a member of the firm of Gordon Brothers, shoddy manufacturers.

Arthur A. Kritler, aged 34, treasurer of Prudential Henrietta Mills, Jenkintown, Pa., died March 14.

Stephen N. Mason, aged 56, until recently chemist of the Ayer Mill, American Woolen Co., Lawrence, Mass., died Feb. 28.

Walter Ziegler, aged 52, salesman in New York and Pennsylvania for the shoe fabrics department of Pepperell Mills, died March 6 as result of an automobile accident at Williamsport, Pa.

Hudson S. Bemis, aged 71, chairman of the board of Bemis Bros. Bag Co., died in St. Louis, Mo., March 17. He was with the company founded by his father and his uncle for 57 years.

Fernand De Francia, aged 62, for 10 years publicity manager in Europe for E. I. du Pont de Nemours & Co., died in Paris, March 20.

Lee Cadien, aged 47, vice-president, secretary, and a director of Celanese Corp., of America, died suddenly in New York, March 19.

C. O. Bridger, aged 46, vice-president and treasurer of Bladenboro (N. C.) Cotton Mills, died last month in New York after an illness of nearly a year.

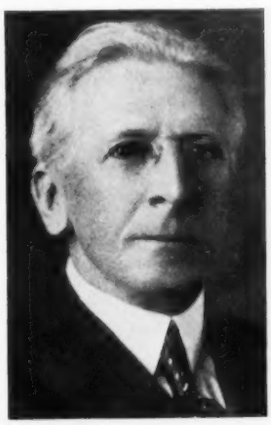
James Lafayette Morgan, aged 83, Marion, N. C., vice-president and director of the Clinchfield Mfg. Co., died in a Charlotte, N. C., hospital, March 14.

Meyer H. Gradwohl, aged 80, recently with the Artcraft Silk Hosiery Co., in New York but previously for over 33 years active in the resident buyer field, died March 22.

Alfred Akeroyd, former Boston wool broker, died March 22 at Wellesley, Mass.

Ray P. McLoughlin, aged 55, associated for many years with the McLoughlin textile interests in Utica, N. Y., died March 22.

George E. Drum, aged 74, president of Smith, Drum & Co., Philadelphia, died March 17 in Germantown, Pa. In 1888, when 24 years old, he entered into partnership with Robert P. Smith and founded the business. Mr. Drum was identified with the engineering department while Mr. Smith took care of the outside contacts. When the firm incorporated in 1924, Mr. Drum became vice-president. He became president in 1929 following the death of Mr. Smith. Since 1933, Mr. Drum has not been active in the business because of poor health.



Geo. E. Drum

W. R. Odell, aged 83, president of Kerr Bleaching & Finishing Works, Concord N. C., died suddenly March 25. He was one of the oldest active textile mill executives and had been active in the industry at Concord since 1877. He is survived by two sons A. G. and F. C. Odell, the former being treasurer of the Kerr company. His son R. M. Odell died only a few weeks ago.

George H. Simonds, aged 64, for many years treasurer of the Brightwood Mfg. Co. North Andover, Mass., died at his home in Boston on March 25.

William Samuel Morton, aged 63, superintendent for 30 years until retirement in 1932 of the Dallas (Texas) Cotton Mills Co., died Feb. 28. He was an organizer and first president of the local textile association.

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MILL NEWS

Cotton Mill News

Alabama Textile Mills, Abbeville, Ala., has completed the erection of a new building to house the equipment of the present plant, at a cost of $45,000.

Best Mfg. Co., Gainesville, Ga., has completed construction of new local mill, one-story, 80 x 100 ft., and will begin operations at early date. The plant, with auxiliary structures, will represent an investment of about $150,000.

Slater Co., North Webster, Mass., mill property has been sold for $55,000 to the B. & W. Footwear Co., Worcester, Mass., the assessed valuation having been reduced from $237,000 to $60,000.

Lenoir (N. C.) **Cotton Mill,** has discontinued operation and the corporation will liquidate.

Erlanger Cotton Mill, Lexington, N. C., is installing modern drinking fountains in each department of the mill.

Indian Creek Cotton Mill, Lincolnton, N. C., recently purchased by Robert P. Dicks of Rockingham, N. C., brought a price of $19,500, including the buildings, machinery and real estate.

Rhodes-Rhyne Mfg. Co., Lincolnton, N. C., under direction of R. P. Dicks, is continuing without change in operating personnel. It has added a line of window curtains styled to match some of its bed spreads.

Alba Twine Mill, Mariposa, N. C., has installed two looms on which bedspreads are manufactured.

Dunean Mills, Greenville, S. C., recently announced a replacement program, which includes the installation of 300 new looms.

Springs Cotton Mills, Lancaster, S. C., have work nearing completion on new two-story addition at local mill, 150 x 300 ft., for expansion in weaving department, and will soon begin installation of new 40-in. looms and auxiliary equipment. The expansion will make a total of about 7000 looms in the weaving division.

Marlboro Cotton Mills, McColl, S. C., have secured an RFC loan, to be used to modernize the plant and equipment. Machinery will be installed for cotton sheeting as well as tire fabric, which, in the past, was the sole product.

Santee Mills, Orangeburg, S. C., will install two Diesel engines of 300 hp. and 600 hp., respectively, replacing a steam engine.

Gonzales (Tex) **Cotton Mill,** closed since August, 1931, has reopened following overhauling of equipment.

Houston Cotton Mills Co., Kingsville, Tex., has begun operations and is housed in the former San Antonio Cotton Mills building at Kingsville.

Canadian Cottons Ltd., Cornwall, Ont., has installed 24 new Model X Draper looms.

Wool Mill News

Millbrook Woolen Mills, Yantic, Conn., are negotiating for a loan with RFC and plan early resumption of operations at plant as soon as arrangements are concluded.

Peterbrook Mills, Leicester, Mass., formerly operated by the River Woolen Mill, Inc., has been purchased by the Shamrock Woolen Co. Ralph E. Duffy, treasurer, states that women's fabrics and cloakings will be manufactured, 100 persons eventually being employed.

Talbot Wool Combing Co. Norton, Mass., has been incorporated to deal in comb, scour and process wool. The authorized capital is 5,000 shares, 1,500 having been paid in. Herbert P. Mason is president and J. Sidney Stone treasurer.

Ohio Carpet Co., West Warren, Mass., is being organized to resume operations of a

Recent Financial Reports

Profit and loss statements by a number of textile companies follow:

	Fiscal Period or Year 1937	1936
Kendall Co. and Subsidiaries	$451,275	$872,792
Patchogue-Plymouth Mills	102,659	177,617
Real Silk Hosiery Mills	20,583	116,615
B. B. & R. Knight	—494,905	210,607
Alabama Mills	226,576	365,671
Celanese Corp. of America	4,461,227	4,406,993
American Bemberg Corp	1,133,615	598,161
North American Rayon Corp	2,303,815	1,959,710
Skenandoa Rayon Corp	352,055	94,920
New Process Rayon, Inc	—7,539	—13,789
Arlington Mills (to Nov. 30)	342,464	719,524
Burlington Mills Corp	715,594	970,568
U. S. Finishing Co	—886,444	—686,771

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for *Highest* Production and Quality

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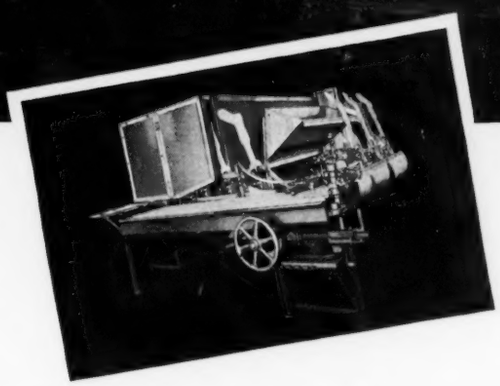
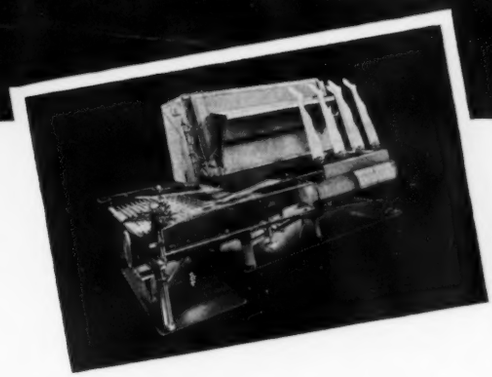


MEN'S HALF HOSE MACHINE 10¾ ft. wide, 9½ ft. deep—Reasonable production, 390 dozen pairs in 8 hours.



MACHINE FOR WOMEN'S HOSIERY 11½ ft. wide, 9½ ft. deep—Reasonable production, 212 dozen pairs in 8 hours.

See Them at the Knitting Arts Exhibition

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CRAMERTON, N. C.

TALLAPOOSA MILLS
TALLAPOOSA, GA.

WILLIAM WHITMAN COMPANY, INC.
NEW YORK BOSTON PHILADELPHIA CHARLOTTE

MILL NEWS

former company of same name, dissolved after mill was destroyed by fire in March 1936. New company will be headed by the same interests, including George M. Wallace, president of former company. The local idle mill of the Maryland Silk Mills, Inc., is being taken over, and will be remodeled and equipped at early date.

Jackson County Woolen Mills, Pascagoula, Miss., began operations April 1, E. W. Minns, plant manager, announced. Plant has floor space of 100,000 sq. ft. and will employ at start no less than 500, the ten-year State tax exemption feature calling for that minimum number.

Dartmouth Woolen Mills, Claremont, N. H., has purchased **Black Bear Woolen Mills, Inc.,** Proctorsville, Vt., which closed about three months ago and employed 250. L. B. Ellis, general manager of Dartmouth, states that no plans have yet been made for re-opening the Black Bear property.

Sidney Blumenthal & Co., South River, N. J., will sell its 23 single dwellings in this town on April 23.

Louis Kraemer & Co., Stoney Creek Mills, Reading, Pa., will be sold at auction on premises, April 20 at 11 a. m. Associated Auctioneers, Inc., Philadelphia, are in charge. Sale will include real estate, stock and machinery, the latter including 29 92-in. looms and preparatory machinery.

Woonsocket (R. I.) **Spinning Co.** has sold all assets to Serge Lamoreux, former treasurer and receiver, who hopes to form a new corporation and re-open if conditions become favorable.

Hill & Lacross Co., East Greenwich, R. I., has been purchased by new interests from Henry M. Boss, receiver, and plans are under way for early resumption of operations.

Woonsocket (R. I.) **Worsted Mills** real estate has been bought by E. A. Farnell, former vice-president of the concern, for $15,000. He plans to operate the plant.

Rayon & Silk Mill News

American Throwing Co., Griffin, Ga., was organized by R. P. Shapard, Jr., Mrs. R. P. Shapard and W. A. Gregory, starting business with capital of $70,000. The concern will process raw silk, rayon and other materials for weaving, knitting and spinning. Work on structure has started near the Spalding Knitting Mills, another R. P. Shapard interest.

Columbia Ribbon Co., Paterson, N. J., is perfecting plans for reorganization of company under section 77-B, Federal Bankruptcy Law.

Park Silk Co., Paterson, N. J., and Lebanon, Pa., has filed petition to reorganize under 77-B.

Andover (N. Y.) **Silk Co., Inc.,** has been chartered with capital of $15,000 to engage in manufacture and distribution of silks and other textiles. Principals are Bertram Stamm, 185 Madison Ave., New York, Crayton E. Earley and John E. Cannon, Andover.

Harry Z. White plans to establish and operate a cloth weaving business at 72 East Genesee St., Buffalo, N. Y.

Burlington Mills, Inc., has opened a throwing plant in Reidsville, N. C., in a building which formerly housed the Reidsville Rayon Mills, also a unit of the company, which was dismantled. The Reidsville equipment has been installed in the Covington (Va.) Weaving Co. plant.

Cleveland Cloth Mill, Shelby, N. C., will construct a two-story addition, to provide 24,000 sq. ft. floor space, and install 14,000 additional throwing spindles.

Maxwell Textile Co., Inc., Allentown, Pa., owned by L. Hyman & Co., New York plans to dispose of its plant and equipment and discontinue operations. The plant has a 140-loom capacity on broad silk.

Hess, Goldsmith & Co., Kingston, Pa., is discontinuing operations at mill at Wilkes-Barre, Pa., and will concentrate production in the future at their Kingston plant.

Georgetown Silk Co., Inc., Wilkes-Barre, Pa., has begun erection of new one-story addition to branch mill at Durham, N. C. It will cost over $25,000, with equipment.

H. & H. Mfg. Co., Inc., Quidnick, R. I., is being reorganized under Section 77-B, Federal Bankruptcy Law.

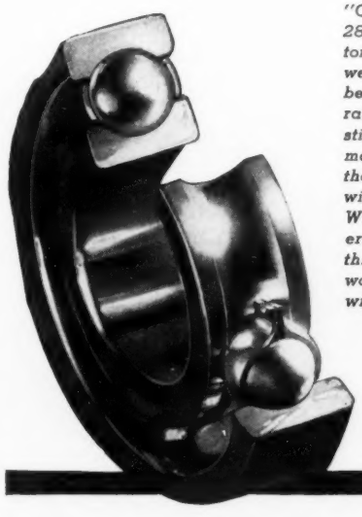
Kingsboro Silk Mills, Inc., Daisy, Tenn., will soon complete the installation of new dyeing and finishing machinery.

E. I. du Pont de Nemours & Co., Rayon Division, Waynesboro, Va., has superstructure under way on a large two-story addition to main mill, to be used for storage and distributing. Cost over $100,000, with equipment. Structure is scheduled for completion in June.

Aux Tissages Francais Reg'd. has opened a rayon

WHY Johnson & Bassett, Inc. selected 3432 SKF bearings and hangers

ATLANTA WOOLEN MILLS SAY:



"On our new mules, we can get 28,000 pounds from 23 operators, each working 40 hrs. per week at 50c per hr. Thus we have been able to raise our operators' rate of pay better than 10%, and still show considerable savings, made possible when we found that operators could run 1½ mules without a great increase in effort. We expect further savings as operators become accustomed to this work assignment. Savings on warp winder, 64%; savings on winding our filling, 10%."

● Johnson & Bassett require a ball bearing that is accurately made, with the high load carrying capacity and the ability to work smoothly at high speeds so necessary for the many rotating parts of their Giant Package Mules.

Besides, they need a ball bearing that is practically free from Friction . . . saves labor, hazards, production delays and surplus oil involved in lubrication.

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Compare this Machine with your present equipment. You will find that it requires less square feet of floor space per dozen than any existing method of finishing; less steam consumption — heating is direct; less power — a one-quarter horsepower motor operates the entire machine; less investment per dozen — reasonably priced; less upkeep — built to render years of service; and production possibilities with quality work that cannot be challenged.

Machines will pay for themselves in direct savings to you.

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Paramount Textile Machinery Company

Main Sales Office

538 S. Wells Street, Chicago, Ill.

MILL NEWS

drapery manufacturing mill at 455 St. Helen St., Montreal, Quebec. Six looms have been placed in operation. The company is a subsidiary of Aux Tissages Francais Inc., Paterson, N. J.

Knitting Mill News

Douglas (Ga.) **Silk Products Co.** has completed a new 55 x 230 ft. building. Fifteen additional machines will be installed.

Grenada Knitting Mills, 1109 Hume-Mansur Bldg., Indianapolis, Ind., has been incorporated to manufacture silk hosiery by S. J. Mantel, G. P. Doyle and W. F. Elliott.

Marcum Knitting Mills, Inc., Lawrence, Mass., have been incorporated with capital of $15,000, to operate a local mill on Essex St. Julius Stern is president and treasurer.

Yund, Kennedy & Yund, Inc., Amsterdam, N. Y.— Machinery and equipment at this mill has been sold at public auction to a number of buyers, and plant will be dismantled. Trade-marks were also sold, "Thermos" going to Worcester Knitting Co. for $7,800. There were no bids on buildings and real estate.

Wiscassett Mills Co., Knitting Department, Albemarle, N. C., is completing an improvement program, in progress for a number of months, representing a total investment of $400,000. Installation includes 40 new Kalio knitting machines, to replace old units at the mill. These are 42 gauge, 26 leggers and 14 footers.

Hatch Full-Fashioned Hosiery Co., Belmont, N. C., has awarded contract for the construction of a $50,000 addition to the plant to L. S. Costner, of Cherryville. The new structure will contain a knitting room, finishing room and steam plant, and a complete new dye house.

Knit Products Corp., Belmont, N. C., has installed 50 additional hosiery machines in the new building.

Foster Hosiery Mills, Burlington, N. C., has completed a 28 x 100 ft. addition at cost of $40,000.

Hoover Hosiery Mill, Concord, N. C., will complete a $15,000 addition this month.

Ridgeview Hosiery Mill, Conover, N. C., will purchase new machines for enlargement of its full-fashioned hosiery department.

Walker Mills, Inc., East Gastonia, N. C., recently organized, have begun operations at new local mill, occupying a portion of the former Ozark Mill, East Ozark Ave. In addition to knitting anklets and wristlets, a dyeing and finishing mill will be operated.

Fayetteville (N. C.) **Knitting Mills,** recently formed with capital of $100,000, plan early operation of local mill. Property is being acquired. New company is headed by E. C. Sanders, formerly with Standard Hosiery Mills, Alamance, N. C.; George Fowler, formerly superintendent of the dyeing and finishing divisions of the same company and E. I. Pennington, Burlington, N. C. Eight full-fashioned machines will be installed.

Gastonia, N. C. Robert Jackson, manager of National Weaving Co., Lowell, N. C., for the last eight years and prior to that with Judson Mills, Greenville, S. C., recently announced plans for a $150,000 full-fashioned hosiery mill to be established at Gastonia, beginning with about 10 machines.

Hafer Hosiery Mills, Hickory, N. C., have completed an addition 25 x 40 ft. to the knitting division, constructed to provide space for rearranging machinery.

Adams-Millis Corp., High Point, N. C., has work nearing completion on new one-story addition, and will have unit ready for service at early date. Cost about $35,000, with equipment.

G. H. Kearns, president of Crown Hosiery Mills, Inc., High Point, N. C., announces plans for new hosiery mill at Liberty, N. C.

Melrose Hosiery Mills, High Point, N. C., has begun erection of one-story mill, 115 x 150 ft., in Melbourne Heights district near city limits, to be operated as a branch plant. Installation will include 12 Reading full-fashioned hosiery machines. Cost about $125,000 with equipment. H. V. Bilberstein, Charlotte, N. C., is architect and engineer.

Blue Ridge Hosiery Mill, Marion, N. C, has been purchased by A. C. Hewitt, Jr., of New York. It will continue to operate as heretofore.

Rosman (N. C.) **Knitting Mills, Inc.,** capitalized at $30,000, will manufacture knit goods and other textiles.

Siler City (N. C.) **Hosiery Mills Co.,** recently organized, and now constructing a local mill, has awarded contract to Crutchfield-Sullivan Co., Greensboro, N. C., for installation of an air-conditioning system.

John-Massey Co., Valdese, N. C., is a new knitting mill

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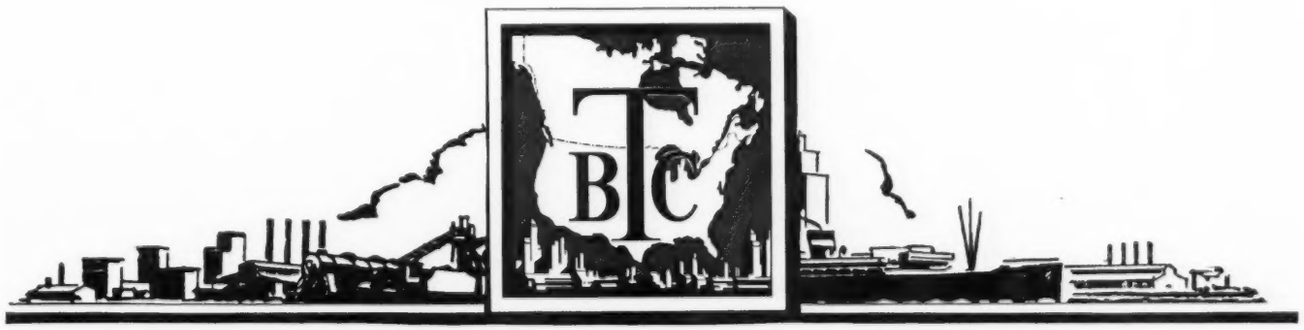

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JOHN S. WHITTEMORE, *Secretary-Treasurer*
80 Federal Street, Boston

MILL NEWS

which began operations in March. It is under the management of Erwin M. Williams and J. Frank Verrault. Infants' and children's hose are manufactured.

Oak Grove Hosiery Mills, Langhorne, Pa., was destroyed by fire, March 27, with loss of $100,000.

Bambach Hosiery Mill, 77 East Wister St., Philadelphia, Pa., has acquired property at Milton, near Pensacola, Fla., for new mill, to be one-story, reported to cost over $45,000, with equipment.

Onyx Knitting Mills, Philadelphia, Pa., will continue operations at local mill until further notice, and will not remove plant to its branch mill in Jackson County, Miss., as recently proposed.

Sport Wear Hosiery Mills, Inc., will soon start up their one-story branch mill at Etowah, Tenn., constructed by the municipality. Equipment will give employment to about 150 workers.

Meinig Hosiery Co., Reading, Pa., have made application for reorganization under 77-B of bankruptcy act.

Princess Royal Hosiery Mills, Reading, Pa., were sold March 23, and brought $80,000. The real estate, leased by the mills, was not included in the sale.

Selinsgrove (Pa.) Knitting Mill, Inc., has been incorporated for $20,000 to engage in manufacture of hosiery at 219 Orange St., that city.

Lumb Knitting Co., Pawtucket, R. I., is being liquidated by its recent purchaser, Herman P. Goldberg, Eagle Yarn Co., from Marshall Field & Co., Aaron Krock is the liquidating agent. Machinery and equipment is being offered at private sale, and buildings placed on the market.

Rodgers Hosiery Mill, a unit of the Palmetto Hosiery Mills, Laurens, S. C., have purchased 10 new knitting machines and auxiliary equipment at a cost of about $125,000, and will begin installation soon.

Allen-A Co. will centralize its operations at its Bennington, Vt., plant. The plant operated at Kenosha, Wis., for 46 years is being closed. The concern has abandoned its women's hosiery line. The Bennington mill turns out men's hosiery, swimming suits and sportswear.

Virginia Maid Hosiery Mills, Inc., Pulaski, Va., have begun construction of new branch mill at Hillsville, Va., to be one-story, 110 x 160 ft. Cost over $75,000, with equipment.

Shenandoah (Va.) Knitting Mills, Inc., capitalized at $200,000, was recently organized to manufacture full-fashioned hosiery. Building to house this firm is now under construction, and will probably be finished about May 1.

Victoria Textile Mills, Inc., Winchester, Va., have leased the building of Berryville Mills, Inc., and have installed knitting machines. The production will be sent north for finishing.

Processing Plant News

Lowell Bleachery South, Griffin, Ga., has let general contract to Newton Coal & Lumber Co., Griffin, for three-story addition to mill, 102 x 110 ft. and new one-story boiler house, 50 x 175 ft. Cost over $100,000, with equipment.

Wilson Finishing Mills, Burlington, N. C., has awarded contract for a 70 x 110 ft. addition to H. Frank Mitchell, Jr. E. M. Long took over the mills the first of the year.

Bost Dyeing & Finishing Co., Inc., Graham, N. C., has changed its name to the **Royal Dye Works** and taken in two more stockholders. The plant would continue to operate under management of E. L. Bost. W. B. Sanders, of the Full Knit Hosiery Mills, Burlington, and A. D. Moore, of the Carolina Knitting Mills, Burlington, are his new associates.

North Carolina Finishing Co., Salisbury, N. C., has completed construction of a one-story addition to mill at Yadkin, N. C., and will place the unit in service at once for increased capacity.

Central Falls Finishing Co., newly formed has begun operations in the former plant of the Royal Weaving Co., Central Falls, R. I.

United States Finishing Co., Providence, R. I., plans liquidation of its Silver Spring plant according to E. S. Hackett, secretary. The plant was closed in November, 1937. U. S. Finishing Co. has received an RFC loan of $210,000.

Palmetto Print Works, Greenville, S. C., occupying a portion of local mill of Union Bleachery, has discontinued operations.

Dixie Finishing Co., Emporia, Va., is installing machinery preparatory to starting up. F. A. Tagliabue, president of Palisade Piece Dye Works, North Bergen, N. J., is president.

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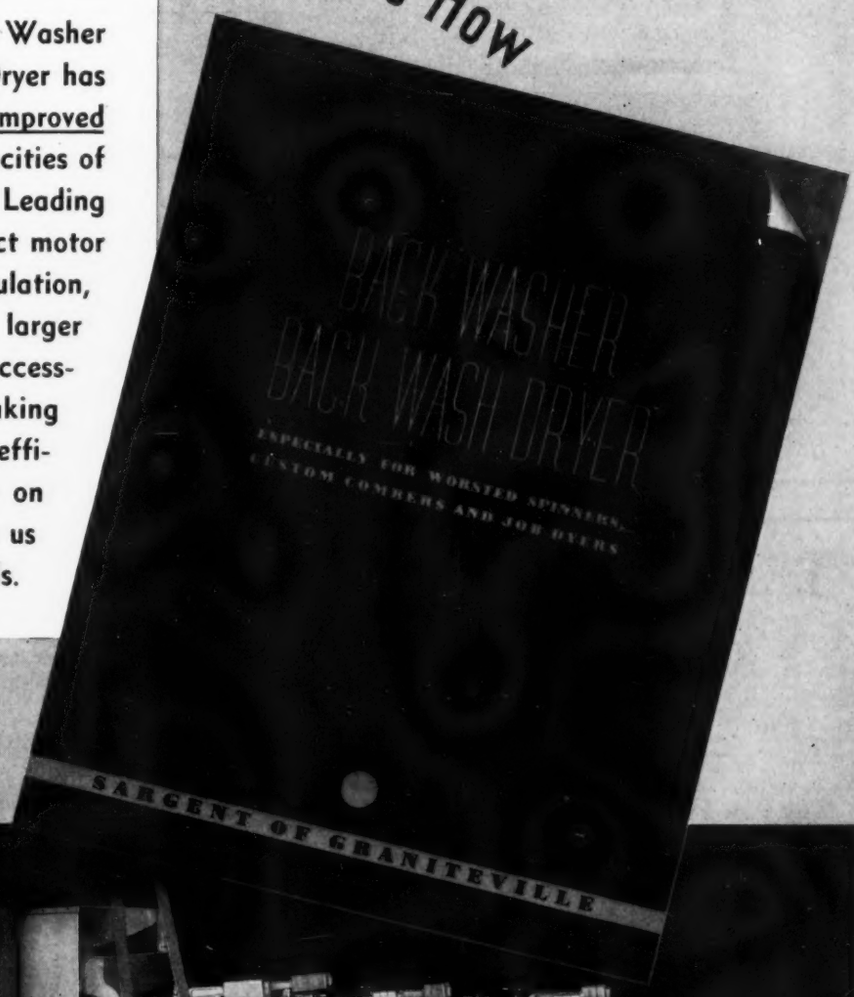

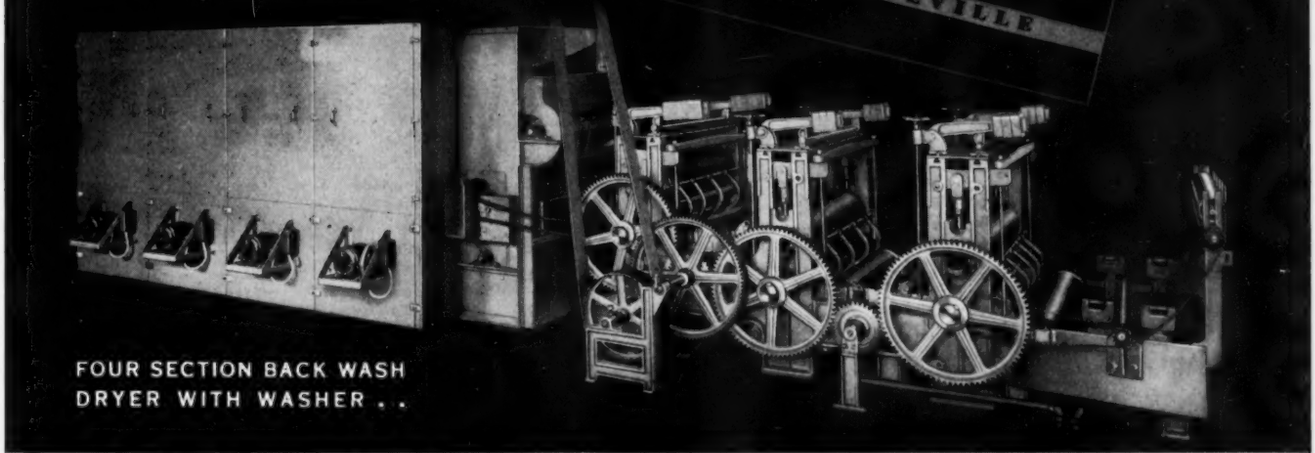

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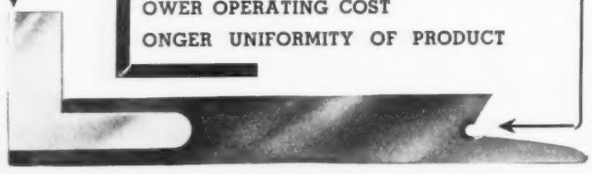

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TEXTILE WORLD'S
Knit Goods Show
"REPORTS"

will appear in the May issue to be published May 10th.

Whether or not you attend the Knitting Arts Exhibition to be held in the Commercial Museum, Philadelphia, April 25-29th, you won't want to miss these concise reports on the Show's exhibits and on the annual conventions of the National Association of Hosiery Manufacturers and the Underwear Institute.

Plus, of course, news about trends and developments in the industry . . . another installment of the Loomfixer's Manual . . . and the balanced bill-of-fare of helpful mill operation, management, methods, materials and merchandising articles that characterize every issue of

TEXTILE WORLD
"The Industry's Most *Useful* Magazine"

U.-K. HEARINGS

(Continued from page 65)

suggestion previously made by the wool group that the treaty with the United Kingdom be put off until after the conclusion of the Australian agreement.

Several of the wool manufacturers supported Mr. Besse in his stand. Lewis A. Hird, of Samuel Hird & Sons, stated that manufacturers of the United Kingdom in the long run would be better off if they advocated a higher rather than a lower American tariff on wool fabrics. He pointed out that the costs of producing these fabrics in Japan, as expressed in terms of American currency, is so small that to secure adequate protection a rate of 200 to 300% assessed against Japanese invoice prices would be necessary. This is almost as much of a problem to English mills which now enjoy a profitable business in this country, he declared, as it is to our own.

Thurmond Chatham, of Chatham Mfg. Co., taking up the situation in blankets said that the low tariff rates have proved a serious handicap to blanket manufacturers in this country and that it is important they be raised without delay. As early as May, 1936, he reminded the committee, the National Association of Wool Manufacturers, alarmed at the increased importation of blankets, asked the Tariff Commission to study the situation but the Commission has never done so. The Committee should not consider lowering duties, he concluded, but on the contrary should immediately consider raising them.

Holds Up Wool Buying

The uncertainty caused by the threat of downward tariff revision is holding up wool buying, stated Col. Millard D. Brown, of the Continental Mills. "Until we are assured there will be no reduction, business will remain at a standstill," he said.

Frank J. Payan, of the French Worsted Co., testified that spinners in Woonsocket, R. I., get from $1.00 to $1.25 an hour for a 40-hr. work-week, while spinners in England and France for the same type of job make $16.00 or $17.00 per week.

With unemployment at a maximum, this is no time to fool with the fundamentals of the textile industry, was the blunt expression used by Edward F. Walker, of the Rhode Island Textile Association.

An "Economic Error"

A supplementary statement made by Julius Forstmann, of Forstmann Woolen Co., re-emphasized the points made in his brief submitted the previous month, in which he had pointed out the vital importance, from the standpoints of national economy and of national defense of maintaining in this country a strong wool growing and wool manufacturing industry.

He dwelt particularly upon the following statement: "Basing my conclusions on my long-established reputation as a wool manufacturer in the United States, I state unequivocally that any tariff concessions on raw wool or wool products granted to the United Kingdom or her Dominions in the forthcoming reciprocity trade treaty, will be an economic error of the first magnitude. As an expert in the use of raw wool and wool products during war time, with an experience gained on both sides of the Atlantic, I make this positive statement: If the American government accedes to the pressure of the representatives of the United Kingdom and her Dominions, to facilitate the importation of raw wool and wool products, it would in my opinion commit an irreparable and perhaps catastrophical blunder."

Wool Trade Also Objects

Speaking for the National Wool Trade Association, Herbert K. Webb said that any reduction in rates on wool products would cause serious handicap to the wool trade, and that it would also cause a falling off in the consumption of domestic wool as well as a curtailment of sheep raising.

Outerwear Representatives Appear

Protest against reduction in tariff schedules so far as the outerwear industry is concerned were registered by Roger W. Whitman, I. B. Davies, and Larry Mandlowitz, all appearing for the National Knitted Outerwear Association.

Mr. Whitman, who is president of the American Hosiery Co., submitted that it would be inconsistent in the extreme and a great damage to the industry to reduce any tariff schedule on finished goods while expecting the American manufacturers to purchase the raw material of their product on a basis of a high import duty maintained on raw wool.

"To expect us to survive in the face of the handicaps I have outlined, could only be accomplished by the very serious reduction in returns to labor, and the definite lowering of the standards of living for American labor," he warned.